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ASSESSING INTERNATIONAL SKILLED LABOR MARKETS AND THE DISRUPTIVE INNOVATIVE IMPACT OF COVID-19

Mémoire présenté par
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Last but not least, I would like to thank my family and friends who have all been very supportive during this anxious time of COVID-19. When the 2nd wave of the pandemic lead again to a context of isolation, it was extremely hard to focus and get back to consistent work, and I couldn't have achieved it without their continuous support.

I, the undersigned,

BEI, Federico, MMS-60 Master’s stude, hereby declare that the attached work is free of any plagiarism and complies in all respects with the study regulations on borrowing, citing and exploiting various sources signed when I registered at ICHEC, as well as the instructions concerning referencing in the text complying with the APA standard, the bibliography complying with the APA standard, etc.". made available to me on Moodle. By my signature, I certify on my honour that I have read the aforementioned documents and that the work presented is original and free of any borrowing from a third party not properly cited".

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Federico Bei

Motivation

This project was written for the completion of the Master's degree in Management Sciences (MMS 60) at ICHEC Brussels Management School.

The motivation of this study comes from the author's personal situation. While pursuing his last academic year at ICHEC, the author found himself in the midst of one of the largest pandemics in human history, creating a limited labor market with very few job opportunities.

As potential future Masters graduate who is looking for new job positions, it seemed fundamental for the author to assess a new post-pandemic perspective on the global professional labor market in order to be ready to face new market requirements in the best possible way.

Problem statement

The COVID-19 pandemic has wreaked havoc on the global economy, with far-reaching consequences for people of all cultures and nations. The virus's rapid spread has benefited from globalization's inherent interconnectedness and frailties, catapulting a global health crisis into a global economic shock that has disproportionately impacted the most vulnerable.

The coronavirus disease, which emerged from the natural environment and has paralyzed our communities and economies, shows the interdependence inherent in global and national development goals, but it is jeopardizing global/national attempts to achieve them. Although the pandemic might not be over, it is clear that changing global approaches to trade and growth is unavoidable.

As a result, this study was carried out to assess the effects of COVID-19 on the global professional labour market, as well as its disruptive revolutionary potential.

Research Methodology

The following project pursues the Applied Research typology.

No targeted surveys or specific interviews have been carried out during this whole work, as they were considered not necessary or not feasible by the author, given the global topic and the variety of perspectives this project embraces.

This research was conducted based on data collected from the primary data. Primary data is information that is gathered directly from a data source without having to go through any other outlets. It's usually gathered for specific research reports, but it may also be shared openly and used in other studies. This research aimed to evaluate COVID-19's impact on the global skilled labour market, as well as its disruptive technological potential. So, the researcher referred to several academic reports, research paper, reports generated by Government and non-government agencies and various online data resources.

In this research, the researcher used keywords to search primary data resource online and also explore various academic report to collect data regarding the research topic. After getting the primary data, the researcher read the report and extract the desired information, facts and figures etc as raw data, relevant to this research from 24th February 2021 to 24th June 2021. The raw collected data was further analysed by cross-checking with another report(s) published by various agencies to ensure the authentication of the facts and figures. Over 150 research papers, journals and reports are referred to in this study and the list of these reports, academic papers, reports shared by Government agencies, NGOs and various online data resources used in this report are listed in the reference list at the end of this research paper.

Another important factor is the validity and reliability of the report. Validity and reliability refer to the psychological factors or concepts that are being tested. To put it another way, validity and reliability are used to fragment a systematic assessment. By finding answers to the silent questions, comprehensive assessment aids in the gathering of facts, including theoretical data (Centellas, 2006). Reliability is a term used to measure consistency in research and to create understanding in the studies. It is related to the concept of high-quality research (Stenbacka, 2001). The sources of primary data used in this study were valid because the data was collected from various verified sources as mentioned and crossed examined and analysed before using in this research.

Background of the study

Through extensive desk research, the coming 6 chapters will tackle different aspects of the sub-mentioned global topic.

In the first chapter, we're going to assess the general economic impact and results of the pandemic. The aim here is to analyze concrete data in order to assess the damages and the aftermath of the pandemic in the skilled labor market. We will consider some assessments on the macroeconomic effects of large, global pandemics, especially the characteristics of COVID-19, on world economies. We will compare the results with those obtained for developed regions, such as the U.S. or E-U. Then, we examine the impact of the pandemic on the skilled labor market, by pre-cisely analyzing the branches that have been able to adapt and find alternative solu-tions.

The second chapter stresses the importance on the acceleration of automa-tion and the growing importance of remote working due to COVID-19. In this part, the Asian market is one of the concerned markets to analyze, as with the case study of Japan, where the highly anticipated importance of digitalization has been speed up through the pandemic.

In the third and fourth chapter, the focus lies on meeting the pandemic's new de- mands from two different perspectives : from an already established, powerful corporation to Small and Medium-Sized Enterprises and Start-ups. Depending on the structure of the organization, we will see how different are the challenges created by the pandemic. Was the pandemic only a limited threat to big corporations, compared to smaller structures ? Were their huge financial and labor resources a strength as we all might consider ? In contrast, could SMEs and Start-ups profit from this tipping point ?

After assessing how different structures/organizations have handled the pandemic, we're going in this fifth chapter to form an impression on a new kind inde-pendent actor in the labor market that has emerged through to the acceleration of digitalization : the so-called 'digital nomads'. Obviously, the pandemic has urged the rise of these modern freelancers, as working remotely almost gets inevitable in this context of isolation. Are digital nomads the new protagonists of the novel coronavirus ?

Last but not least, in the final chapter, we're going to tackle the new different working models that have emerged in response to the pandemic's new demands. In this part, we're going to analyze the adaptation of competitive skilled workers by studying for instance new re-skilling methods and mindsets in Scandinavian countries such as Sweden. What are the new trends and innovations in the post-pandemic la-bor market ? With elaborated researches, we're also going to see in this chapter that there's a new surfacing of a new type of online 'on-demand' employee

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LIST OF ABBREVIATIONS

ABW	Activity-Based Workplaces
ACEA	European Automobile Manufacturers Association (French: Association des Constructeurs Européens d'Automobiles,)
ADB	Asian Development Bank
ANI	Artificial Narrow Intelligence
AI	Artificial Intelligence
AR	Augmented Reality
ANI	Artificial Narrow Intelligence
B2C	Business-to-Consumer
COVID-19	Coronavirus disease of 2019
CEFIC	European Chemical Industry Council (from its former French name Conseil Européen des Fédérations de l'Industrie Chimique)
EA	Euro Area
EaP	Eastern Partnership
EC	European Commission
EFPIA	European Federation of Pharmaceutical Industries and Associations
EU	European Union
FDI	Foreign Direct Investment
FY	Financial Year
GDP	Gross Domestic Product
IoT	Internet of Things
IP	Intellectual Property
ICT	Information and Communications Technology
ILO	International Labour Organization
LDC	Least Developed Country
OECD	Organization of Economic Cooperation and Development
HR	Human Resource

PMI	Purchasing Managers' Index
R&D	Research and Development
SME(s)	Small and Medium-Sized Enterprise(s)
T&F	Textiles and Fashion
VR	Virtual Reality
WEF	World Economic Forum
WFH	Work From Home
WHO	World Health Organization
WTO	World Trade Organization
YoY	Year-on-Year

Assessing international skilled labour markets and the Disruptive innovative impact of COVID-19

1. General introduction

After a thorough discussion on various aspects of the economic impact of COVID-19 on the skilled labour market globally, this research will surface the importance of innovations carried out in the skilled labour market around the world due to the disruption caused by COVID-19. But before this, research would like to focus on the two key components of this study i.e. International Skilled Labour Market and COVID-19.

1.1. International Skilled Labour Market.

A labour market is a place for labour and employers to connect. Employers strive to recruit the best employees, and employees compete for the most rewarding jobs. The labour market is an economic system, driven by the demand and supply of the workforce. The firm's demand for labour is known as labour demand, while the worker's supply of labour in the industry is known as labour supply. Changes in bargaining power have an effect on labour supply and demand in the economy. Due to globalisation labour market also turned global, in which most demand of skilled and highly skilled labours as the workforce is required. Market globalization is an imminent megatrend that has changed the international business landscape by enabling both acquiring and marketing activities on a global scale. Nonetheless, people have mixed feelings about globalization. While most people believe that trade benefits customers, it also affects the global labour market. Employees who lose their jobs as a result of globalization must wait a long time before finding new work. Job reallocations would dramatically raise the unemployment rate during the process (Felbermayr et al., 2011).

Globalization of the labour market is not a modern phenomenon; it started when humans began to interact with each other over long distances in different countries. Though globalization is not a new idea, at the turn of the nineteenth century, it was “far from the minds of leaders, businessmen, and voters around the world.” (O’Rourke & Williamson, 2001). According to Cavusgil (1993), one of the most interesting trends of the modern age is the globalization of the market.

Meanwhile, labour can be classified in a variety of ways. The first consideration is one's ability level. Unskilled labour, which does not require preparation, is the most basic. It may be manual labour, such as farm workers, or service work. The next category is semi-skilled labour, which necessitates some level of education or training. Manufacturing jobs are an example. The next category is skilled labour; these are in

a subset of the workforce with advanced knowledge, training, and experience to perform activities that are more complex physically or mentally than routine job duties. Higher education's, as well as expertise levels gained by training and practice, are generally associated with skilled labour, and higher wages are generally associated with it. Examples include law enforcement officers, computer operators, financial technicians, and administrative assistants. The last category is highly skilled labour which requires advanced technological, academic, and interpersonal skills. Problem-solving, leadership, teamwork, system development, and other skills are usually included for example surgeons, CEOs, software developers etc (Bureau of Labour Statistics, 2013).

Labour also classified according to the essence of the employee-employer relationship. The majority of the staff is salaried. This indicates that they are under the supervision of a superior. They are often paid on a weekly/biweekly basis and earn benefits. When a contract determines the work to be produced, this is known as contract labour. It is up to the employee to decide how it will be achieved. The payment is made in the form of a commission or a flat fee for the job. There are no other benefits (U.S. Department of Labour, 2008).

Slave labour is the third category. This is against the law. Forced labour occurs when a person is forced to work for little other than food and shelter. Slave labour is another term for child labour. Children cannot make an informed decision on whether or not to function (U.S. Department of Labour, 2008).

1.2. COVID-19 Pandemic.

The COVID-19 outbreak was caused by the SARS-CoV-2 virus (previously known as 2019-nCoV). The outbreak started in December 2019 in Wuhan, Hubei Province, China. COVID-19 has now spread to every nation. Initially, China was the epicentre of the outbreak, with cases registered in China or among Chinese travellers. Iran, Italy, Japan, and South Korea were the first four more epicentres but now they spread all over the globe. The World Health Organization (WHO) announced a public health emergency of international significance on 30 January 2020, and a global pandemic on 11 March 2020, due to the significant public health danger COVID-19 (World Health Organization, 2020).

Some of COVID-19 symptoms include fever, cough, shortness of breath and other respiratory symptoms. Infection can lead to pneumonia, extreme acute respiratory syndrome, and even death in the most severe cases.The WHO recommends since then frequent hand washing in order top stop the spread of the virus. (Accor World Health Organization, 2020). After the COVID-19 outbreak, the disease's effects have become evident beyond mortality and morbidity in a highly linked and interconnected world. The working of global supply chains has been disrupted due to the slowing of the Chinese economy and production interruptions. Regardless of scale, companies

around the world that depend on Chinese inputs have begun to experience output contractions. The fact that transportation between countries is restricted, if not prohibited, has slowed global economic activity even more (World Health Organization, 2020). Over all, customer and business hysteria have distorted normal consumption habits and generated market anomalies. The financial and labour markets have also responded to the reforms, with global stock indices falling sharply.

2. The economic impact and results of the pandemic on the skilled labour market globally

The COVID-19 has triggered a historic economic downturn around the world, with serious implications for the job market and, further consequences on other important factors like immigration and hiring of a skilled workforce etc. While it is unclear how long the pandemic will have an impact in the worst-affected sectors, such as aviation, hospitality, leisure, and tourism, the crisis appears to be exacerbating global labour market weaknesses. People in low-wage, precarious employment, for example, have been hit harder than those in higher-wage jobs, with particular demographic groups such as immigrants, women, and the elderly workforce bearing a disproportionate burden (Hogarth, 2021). M.Chitiga-Mabugu et al. (2020) also support this statement by evoking the fact that although unemployment rates are surging for all type of labour force, the unskilled and semi-skilled employees are the ones that are suffering the most from the pandemic's effects.

The effect and result of the COVID-19 pandemic on the professional market in the 27 countries of the European Union (EU) are examined in this chapter as a case study to better understand its impact on developed economies. High unemployment levels combined with current travel disorders are complicating things to face Europe's prevalent skills and labor challenges that existed prior to the pandemic. In many European countries, population contraction and labour supply reductions are planned. Still, Owing to the rapidly changing technology sector, Europe's skill requirements are rapidly growing, and technological developments are causing a decline in middle-skilled employment while rising demand for workers at both ends of the skills range—the ones in more stable, highly-skilled jobs, as well as those in low-skilled, insecure jobs. (Hogarth, 2021)

Employment and overall working hours have dropped at the highest rates in history. Unemployment grew more slowly and to a lesser extent due to the high take-up rate of job preservation schemes and shifts to unemployment. This labour market change took place largely as a result of a significant decrease in average hours employed (ILO, 2021). Furthermore, during the first months of 2020, the labour force shrank by approximately 5 million, representing a surge of half a million, compared to the rise between 2013 and the last quarter of 2019. The reduction of the total hours worked might be explained by the labour supply and aggregate demand shocks. According to a report using a sign-restricted structural vector-autoregressive model, these sudden shocks are responsible for one-third of the overall drop in hours worked of 2020. This underlines the immediate effects of lockdowns measures, leading businesses to partly close or reduce their operations, as well as a decrease in the labour force. The negative aggregate demand shock, which represents demand constraints and the possible effect of uncertainty on customer behaviour, is to be blamed for around 25% of this decrease in worked hours. (Anderton et al., 2021).

Following a huge shock to the European economy during the first months of 2020, the EU recovered slowly in the third quarter as lockdown measures were cautiously removed. Yet, during the last quarter of 2020, massive re-infection rates culminated in a downturn in economic activity again. According to the European Winter 2021 Economic Forecast, real GDP in the EU and the euro area is now expected to reach pre-crisis levels by mid-2022. (European Commission, 2021). The actual GDP growth forecasts of the EU for 2021 vary from 3.6 to 4.2 % (Table 1). Even though this is a more optimistic prediction than the economic predictions issued in 2020, the prevailing outlooks point to sluggish economic growth over the next two years. In comparison to global real GDP figures, the EU took a bigger hit in 2020 and will rebound more slowly in 2021 (World Bank, 2021; IMF, 2021). The EU economy will be hit harder than China and the US in 2020 (2 percent growth and -3.6 percent decline, respectively), and it will lag well behind China's recovery forecasts (7.9% and 5.2% change on preceding year for 2021 and 2022, respectively) (World Bank, 2021).

2020	**2021**	**2022**	**GDP Growth Estimated by**	**Source**
-6.3	3.7	3.9	European Commission	(European Commission, 2021)
-7.2	4.2	3.6	IMF	(IMF, *January database*, 2021)
-7.4	3.6	4.0	World Bank	(World Bank, 2021)

Table 1: EU Real GDP estimates (for 2020) and forecasts for 2021-2022 (YoY basis)

There are two significant caveats to the forecasts shown in the table above. As a matter of fact, the COVID-19 is still underway, and scenarios could rapidly change depending on the pace with which the vaccination mechanism is implemented, the effectiveness of the vaccinations, more virus mutations, and various government measures on how to address public health threats. These variables are likely to have an impact on the frequency and magnitude of potential new COVID-19 waves. As a result, economic projections are likely to shift in coming years. Furthermore, even though the EU's chances of resuming pre-pandemic levels of economic activity are rising, a result

in slow growth for the EU economy could be expected. The increase in unemployment is another source of concern for the EU economy. In 2020, unemployment rates in both the EU-27 and the euro area rose sharply, hitting 7.8% and 8.7%, respectively, from July to September. It gradually decreased in the balance months of 2020. On a more optimistic note, the EU unemployment rate is currently considerably lower than the levels seen following the financial crisis of 2008 (Figure 1). The evolution of labour market slack, on the other hand, indicates that the pandemic's effect was greater than conventional measures say (European Commission, 2021).

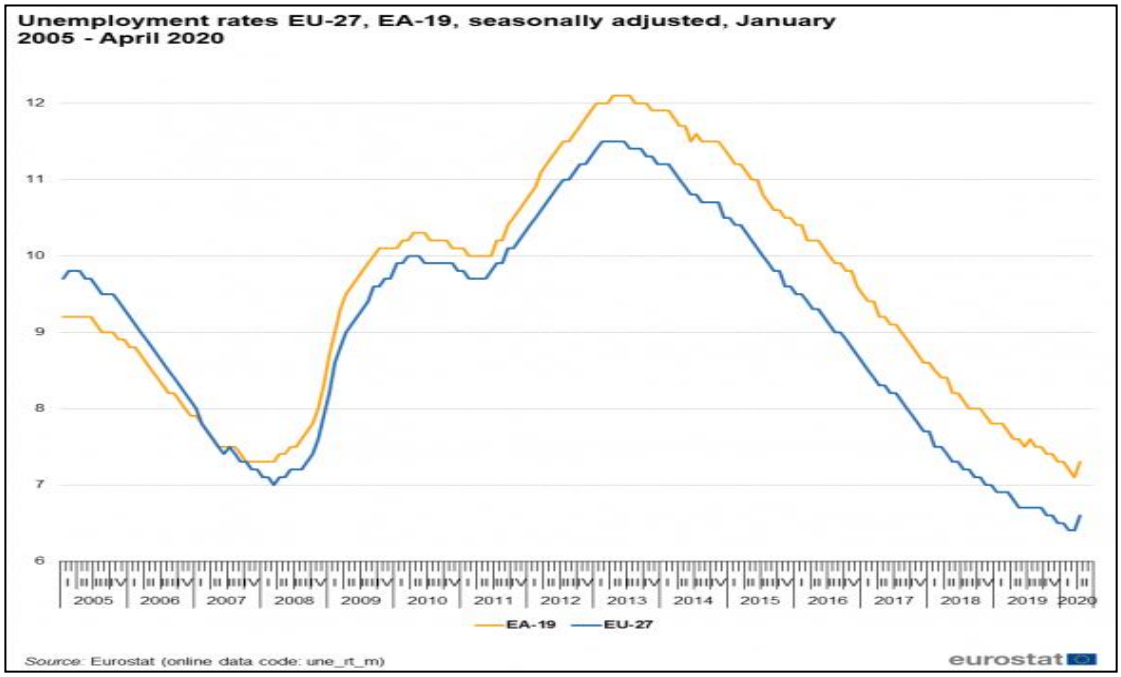
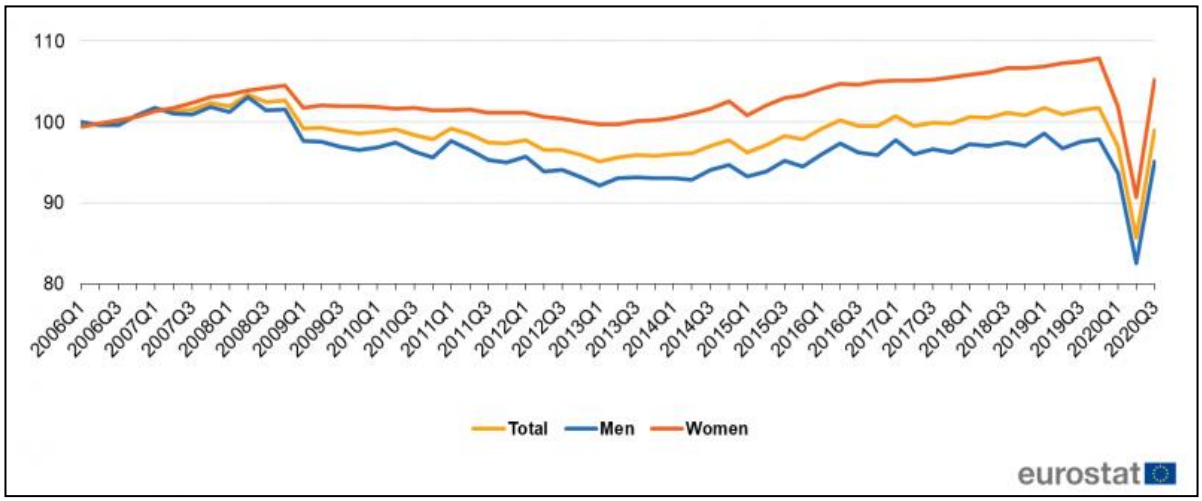


Figure 1: Unemployment Rate in EU and EA
Source: (Eurostat, 2020)

In Q2 2020, there was a large decrease in total hours employed, which is unprecedented. In Q3 2020, the recovery fell short of the rate of real hours employed



before the COVID-19 crisis. Furthermore, due to the expiration of government interventions, the labour market situation is projected to worsen in 2021 with unemployment rates increasing until decreasing in 2022 as shown in Figure 2, (Eurostat, 2021).

Figure 2: Index of total actual hours worked of persons aged 20-64, EU27, 2006-2020
Source : (Eurostat, 2020)

According to the OECD Economic Outlook report (2021), when the very first wave of COVID-19 hit economies in March and April 2020, production by the manufacturing industry in the EU fell sharply by -11.1% and -20%, respectively, compared to the prior time span. The following months between the 2nd and 3rd quarter were considered as readjustment months, with remarkable recoveries, notably in May and in June with a respective increase of 13% and 10.4% over the previous year. In the last quarter, the OECD reports a more slight, but still growing value as the 2nd wave was in coming. Goods trade dropped and recovered faster than it did during the previous financial crisis, but services trade has remained stagnant globally (World Bank, 2021). After January 2020, there has been an obvious difference in the manufacturing and services Purchasing Managers' Index (PMI) in the EU, with services industries being hit much harder (Figure 3). The following Index has somewhat shown different characteristics than it did during the 2008 financial crisis when services suffered a smaller drop than manufacturing. However, due to significant investment weakness, the recovery in industrial output remains incomplete (OECD, 2021).

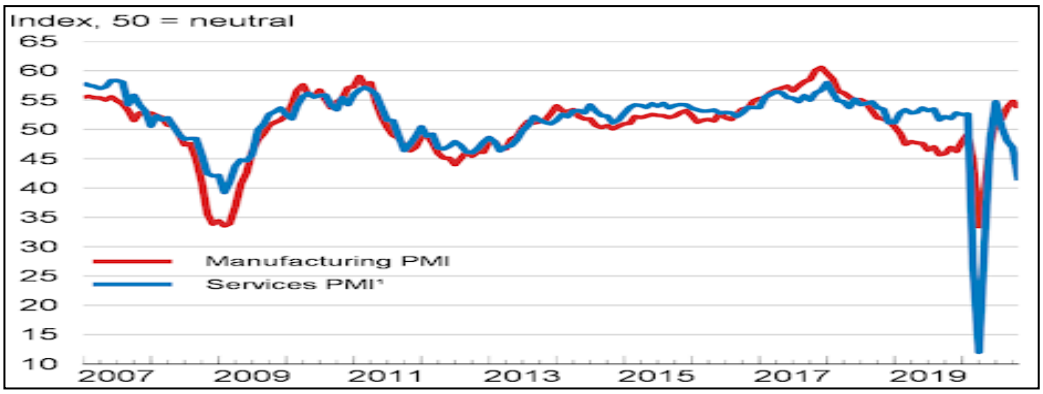


Figure 3: Manufacturing v/s Services Purchasing Managers' Index (PMI)

Source: (OECD, 2021)

After covering an overview of the effects of the COVID-19 on the EU economy, this chapter now concentrates on particular industrial sectors of the EU in the following sections, after that discussion on their recovery pattern and an alternative solution is covered.

- Chemical Industries.
- Healthcare Industries
- Construction Industries.
- Automobile Industries.
- Aerospace Industries.
- ICT Industries.
- Food and Beverage Industries.
- Textiles and Fashion Industries.

2.1. Chemical Industries.

According to the European Chemical Industry Council, the EU is the world's 2nd biggest chemicals producer, accounting for 16.9% of overall global revenue with a turnover of €7,320 billion and a contribution of 12% of European jobs (CEFIC, 2020). The production of the EU chemical industry followed the overall EU industry patterns during the first year of the pandemic. Due to perturbations in many global logistics networks, decreases in usage and eventually manufacturing, overall chemical demand in the EU, as well as globally, encountered major shocks across many end-markets. The decline in chemical demand ultimately led to a reduction in production and supply (PwC, 2020). During the first two quarters of 2020, chemical production in the EU had fallen by 5.2 percent relative to 2019, reaching the lowest level in April (figure 4). As mentioned previously, output rose by 2.9 percent in June highlighting the recovery phase, catapulting consumption to almost regular levels. This surge in consumption and the companies' willingness to adapt their operations to government sanitary and distancing requirements, pushed up demand and chemicals production. In comparison to the previous quarter, the third quarter saw a 6.1 percent increase. However, production performance in Europe varied greatly by region. While some countries have witnessed prosperity (Spain and Poland, with a 5% rise in September 2020), other nations were encountering difficulties (France and Italy, who suffered both from a respective -11.7 percent and -6.7 percent decrease). From January to November 2020, total chemical sector output dropped by 2.8 percent compared to the same time last year.

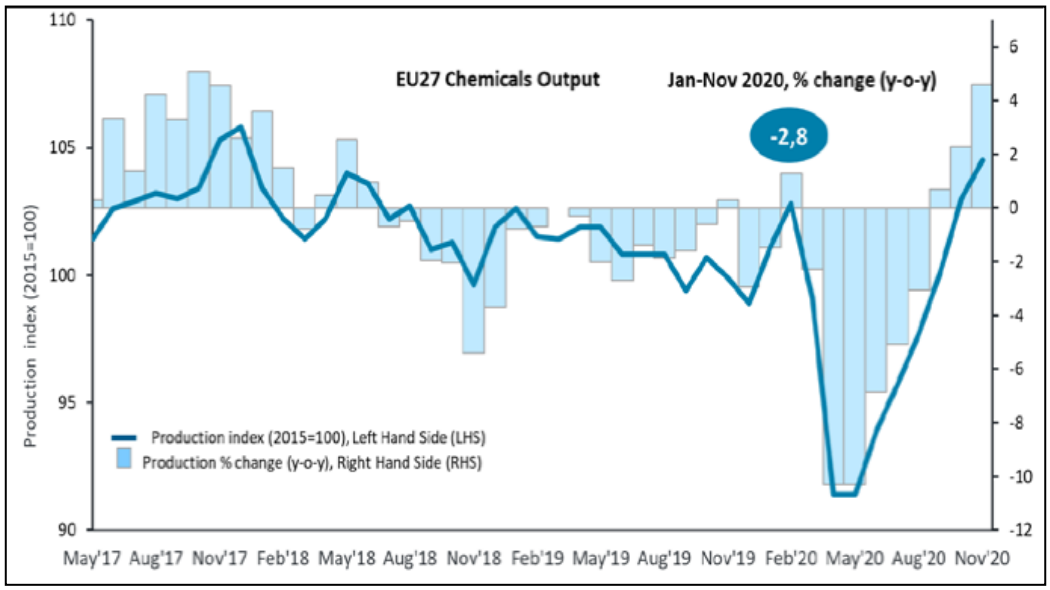


Figure 4: Performance of Chemical Industries Output from January to November 2020
Source: (CEFIC, 2020)

2.2. Healthcare Industries.

The EFPIA estimates that the healthcare industry employed more than 7 million people in the European Union in 2018. The pharmaceutical industry is a vital part of the European Union's economy. Despite having a much lower job rate than other industries (approximately 800,000 jobs in 2019), it had a market value of €213 billion in 2019. (EFPIA, 2020). Another significant pillar of this sector is the medical devices market, which was worth €120 billion in 2018 and employed approximately 730,000 people. The healthcare industry has not been as badly affected as the other industries discussed in this chapter. Although the COVID-19 pandemic had an effect on the business, the negative externalities did not affect the entire industry (SP Global, 2020).

Reduced demand, particularly during the first wave, has harmed the healthcare system, as has fear of infection, which has led to patients deferring "non-essential" treatments and surgeries. In this case, hospitals' profits have declined as more lucrative operations and check-ups have been cancelled to free up ICU beds for pandemic patients. Demand for similar treatments and equipment fell along with the decline of "non-essential" surgeries, impacting the generic pharmaceuticals sector in particular. Hospitals, like other healthcare practice providers, had to deal with demand-supply inconsistencies. Though pharmaceutical retail trade volume rose in the first quarter of 2020, lockdown and Stay-at-Home orders resulted in a 12% decrease in pharmacy retail trade in the second quarter (EFPIA, 2020; Medtech Europe, 2020).

Initial supply chain issues arose as a result of closed factories across the world, and closed borders in the EU. Yet, global and also European pharmaceutical and healthcare equipment stockpiling, is a major problem that has resulted in shortages in some countries and regions (Eurostat, 2021; Medtech Europe, 2021). During the summer, although the demand for face masks kept its high level, distribution networks were able to stabilize and avoid scarcity. Production in pharmaceutical R&D and innovation zone has increased dramatically, with a stunning demand as a result of the implementation of vaccines, and this trend is likely to carry on into 2021. As compared to April 2020, when they were at their lowest, pharmaceutical retail sales increased by 12% in September 2020. This means the industry has recovered 98% of its pre-pandemic levels. (Infosys, 2021).

2.3. Construction Industries.

As per the report of the European Commission (EC), in 2019, the EU construction sector supported 18 million direct workers and contributed €1.216 billion to GDP, accounting for around 9% of total EU GDP. It is a highly vulnerable sector to economic development, and it was particularly affected during the 2008 subprime mortgage crisis. Furthermore, the construction industry is confronted with challenges such as increasing demand, embracing innovation and emerging technology, integrating and adopting energy efficiency, and dealing with climate change (EC, 2021). It seems logical that the European Green Deal will be an enormous threat for growth in the construction industry. However, the EU still insists on the fact that a transition to a climate-friendly and circular economy is going to have a conclusive impact on the industry. In fact, although the European Commission estimates that entities were operating at 25 percent to 30 percent below average capacity at the beginning of the pandemic, (corresponds to the time of the most severe restrictions), the situation is very different across the EU. It was possible to carry on with business as normal in some Member States (for example, Germany), while construction activities were minimal in others (for example, Spain, Finland, or France). The winter contraction slowdown was intensified by the pandemic, with a 20 percent decrease, and carried on until recovery started in the second quarter. Until August 2020, production recovered from -11.5 percent YoY growth to -9.1 percent (figure 5). In November 2020, the construction sector's output stabilized, with production returning to 97.5 percent of the pre-COVID level in February 2020. Nonetheless, it is assumed that by 2023 construction output will be fully returned to pre-COVID levels. Parallel to the varying severity of the pandemic's impacts on different sectors in different member states of the EU (Euroconstruct, 2020).

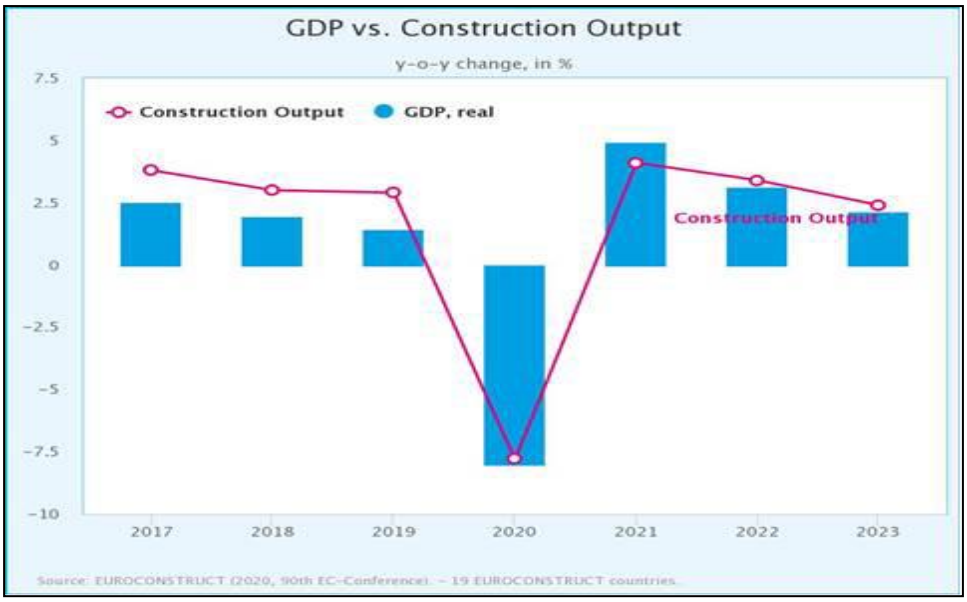


Figure 5: Construction Industry Output v/s Real GDP of EU
Source: (Euroconstruct, 2020)

2.4. Automobile Industries.

According to the EC Automotive Industry study 2020, the car industry, which generates various market services and influences a large supply chain and accounts for 5% of the EU total value-added which is €675 billion, plays a significant role in the EU economy (EC Automotive Industry, 2020). The car manufacturing sub-sector alone employs 2.6 million people in the EU, accounting for 8.5 percent of all manufacturing jobs. The industry contributed 2.6 percent of total EU value-added in 2019. (EU ScienceHub, 2020). Industry, customer behaviour, and manufacturing facilities have all been affected by significant disruptions in wired, autonomous, shared, and electric mobility, forcing competitors and other major actors to find alternatives, shift production, and add new fleets. The automotive industry was one of the hardest hit by the pandemic, according to the Commission Staff Working Document on Identifying Europe's Recovery Needs (2020). The first factory closures in China wreaked havoc on European automotive supply chains. Factory closures in the European Union between March and May 2020, on the other hand, were even more severe. Automobile factories in the EU were shut down for an average of 30 days, with Sweden having the shortest shutdown at 15 days and Italy having the longest shutdown at 41 days. The European Automobile Manufacturers Association (ACEA) estimates that the industry lost 3.6 million vehicles in the first half of 2020, resulting in a €100 billion loss. This number had risen to 4,024,036 vehicles by the end of September 2020, accounting for 22.3 percent of total EU production. In September 2020, the EU's demand for automobiles fell by 28.8 percent compared to 2019. (ACEA, 2020).

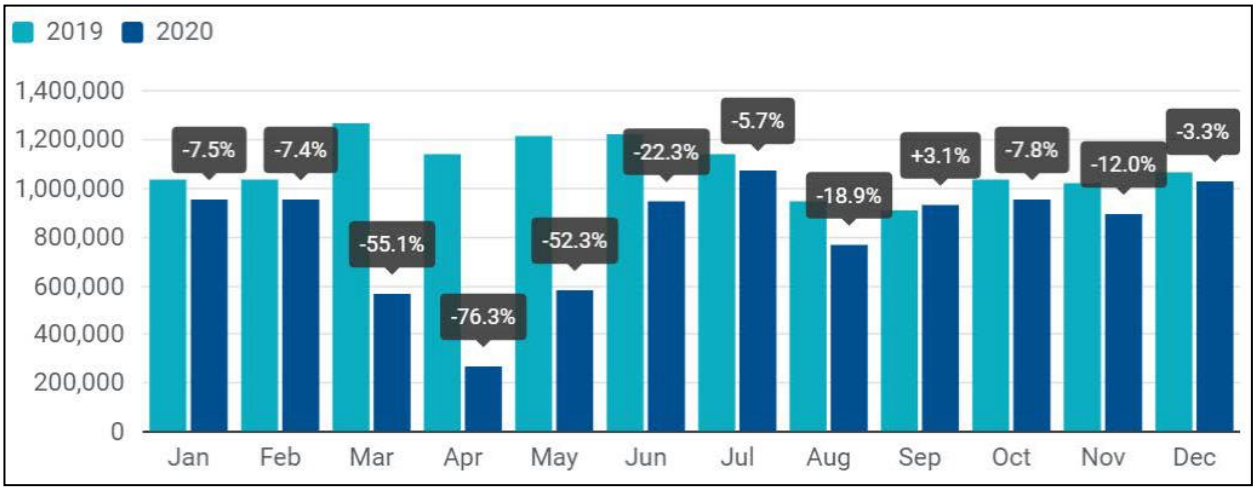


Figure 6: Details of registrations of new cars in the EU
Source: (ACEA, 2020)

Due to factory closures between March and May, the pandemic directly impacted over 1.1 million jobs. Because of hygiene, distance, and security measures, as well as lower production and demand, the average number of active workers in plants was drastically reduced. Some workers were made redundant, others on the contrary were re-hired on short-term contracts: during the first lockdowns in Germany, for example, 95 percent of all automotive companies put their employees on short-term contracts. Furthermore, during the lockdowns, registration offices and service centres in many countries remained open, strengthening business practices. Nonetheless, in November and December 2020, car registrations dropped by 12.0% and 3.3 percent, respectively, on a YoY basis.

2.5. Aerospace Industries.

In 2019, the European aerospace industry produced about €260 billion in total revenue and directly employed about 890,000 people (Eurocontrol, 2020). According to the New EU Industrial Strategy, aerospace is a "strategic ecosystem" that will need expanded production capacity within the EU Single Market in order to address two challenges: green and digital transformation. These activities include establishing greener, cutting-edge aircrafts, in order to minimize CO2 emissions and to reach an advanced level of technology standards. The recently released Action Plan on Synergies between Civil, Defense, and Space Industries lays out a roadmap for rising innovation investments in order to improve Europe's role in the aerospace industry. (Eurocontrol, 2020).

The pandemic's arrival in Europe caused a dramatic dip in demand for aviation, as shown by the usual pattern of March 2020 (-86.1%) (Figure 7), when most EU Member States introduced mobility and transport restrictions. During the first two quarters, the average number of aircraft grounded in Europe rose by 80% YoY, making Europe the area with the most negative global trends. Figures show a modest change beginning in June 2020, with a -72.8 percent gap in June 2020 and a later compensation to -51 percent during the third quarter, as compared to 2019 (IMF, 2021).

Supply delays and significant production fallouts resulted from the immediate decline in demand for aircraft manufacturing, as well as from disturbances in the supply chain of raw materials due to border restrictions. As a result, many companies in the aerospace supply chain, many of which are Small and Medium-sized Enterprises (SMEs), especially second and third-tier suppliers, have faced critical cash flow issues. (IMF, 2021).

Due to surging infections and the reimplementation of public restrictions across Europe, congestion decreased by around -73 percent in the last quarter. In general, during 2020, demand for aviation manufacturing in Europe dropped by 43%, leading to significant Airbus order cancellations. In the service sub-sectors, airlines have been through hard times since the beginning of the recession. Various businesses have filed for bankruptcy or faced major corporate restructuring, resulting in cost and asset reductions as well as job losses.

In terms of net losses for aviation companies, airports and other service providers, European markets fell between 40 and 73 percent in 2020 compared to 2019, with flight reductions varying from 61 percent in the UK to 56 percent in Germany. The combined intra-European and extra-European traffic reductions of 54 percent and 59 percent in 2020 resulted in unprecedented losses for leading aviation companies. In 2020, the European industry is projected to lose about 191,000 direct employees. European traffic is expected to recover to 51% of 2019 levels in 2021. In 2022, a modest recovery is expected to begin, but an actual return to pre-pandemic levels is unlikely is not expected until 2024 (Eurocontrol, 2020) (figure 7).

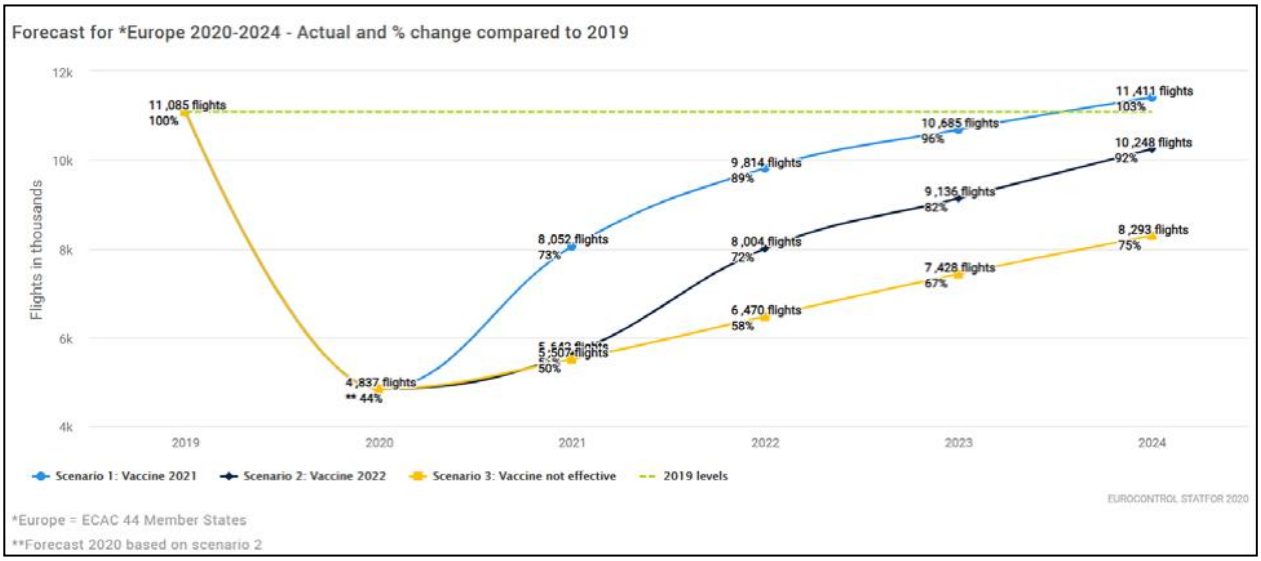


Figure 7: Performance Forecast of European Aviation Sector
Source: (Eurocontrol, 2020)

2.6. ICT Industries.

The information and communication technology (ICT) industry is one of the most diverse and R&D-intensive ecosystems in the European economy. The ICT industry employed over 6 million people across the European Union in 2019, accounting for 4.77 percent of EU value-added, or €645 billion. Despite the fact that the EU prioritizes the development of a digital environment and economy, as mentioned in the EU Digital Strategy, the ecosystem was already compromised prior to the pandemic. Low and fragmented investments, as well as slow adoption of emerging technology, plague both the public and private sectors. COVID-19 increased ICT penetration and digital adoption in the EU, with digital adoption rising from 81% to 95%, but it also had negative consequences for the digital sector, especially during the first wave of COVID-19. The supply chains of several countries have been disrupted, causing progress to slow or stop. Apart from hindered supply, drops in demand also hit the industrial portion of the sector's logistics network. Due to their physical B2C existence, constrained industries like automotive and hospitality saw even lower demand, reflecting lower demand for digital manufacturing and service products. Nonetheless, the need for digital technologies has risen dramatically as a result of the need for telework. (IDC, 2020).

According to a survey of European ICT companies conducted by the European Central Bank (2021) in April 2021, one-third of the companies intend layoffs. Despite a 0.5 percent increase in overall employment over the previous quarter, the amount of hours worked per worker dropped by 6.4 percent. Despite the fact that short-term employment opportunities exist in the digital sector, the sector outperforms others. This is reflected in the annual improvements in value-added for Q2, which fell by 4.8 percent, making the digital industries one of the sectors with the smallest decrease from the previous year. In Q3, the number of people working in the sector increased by 0.9 percent over 2019, while the business value rose by 1.8 percent. In 2020, demand for infrastructure as a whole continued to grow year over year, as shown in Figure 8. Smart phones, such as PCs and tablets, are another industry sub-sector that benefited from the crisis, with demand increasing by 4.6 percent YoY until the end of 2020. Likewise, demand for software that emphasizes on remote working tools and customer experience grew by 4%. Despite the fact that these positive improvements have limited the sector's overall hurt, overall business purchases have decreased. Furthermore server, data storage, and cable-network equipments will contract by more than 5% in 2020; finally, the pandemic and its containment steps will be particularly hard on SMEs, which account for a large portion of the market. (IDC, 2020).

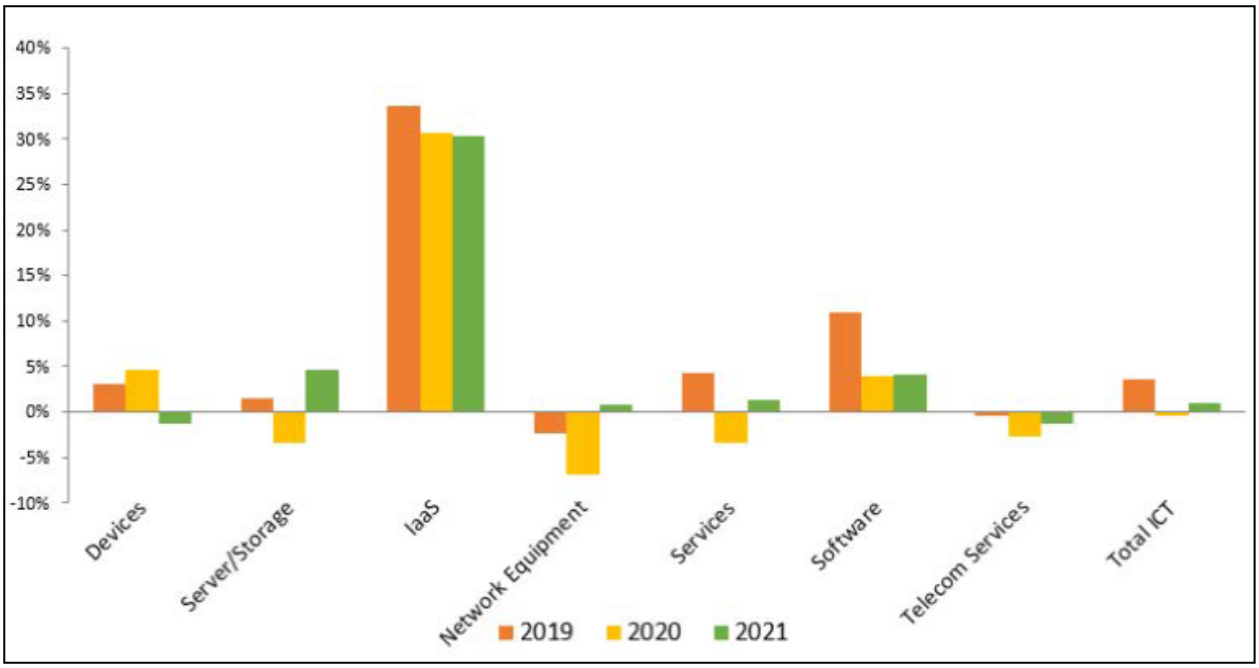


Figure 8: Sector-wise ICT spending in EU
Source: (IDC, 2020)

2.7. Food and Beverage Industries.

In 2019, the food and beverage industries employed approximately 4.82 million people and produced €266 billion in value-added. Furthermore, other sectors such as agriculture and hospitality have major interconnections and interdependencies with the food industry. Even before the COVID-19 pandemic, the food industry was being affected by a shifting consumer behavior and emerging trends, such as an increase in demand for locally generated foods and, as a result, shorter supply chains. As a result of the Farm to Fork strategy and widespread awareness of the necessity for more sustainable, affordable, and nutritious food, suppliers are being forced to adapt. Since the outbreak's effects on the European food industries are so diverse, it's critical to differentiate between the various sub-sectors. Food retailers saw a rise in revenue as a result of a shift in consumer behavior from outdoor eating to eating at home, with subsectors with close links to the HORECA industry suffering the most. Retailers of frozen and processed foods saw the most sales increase. For example, frozen food sales in France were 63 % higher in the second half of March than in the same period last year. Similarly, in late March, packaged food sales in Germany rose by 56% over the previous year (FoodDrinkEurope, 2020).

Surprisingly, even after the first increase in demand at the start of the pandemic, demand stabilized between +15%- 20% this summer, compared to the same period in 2019. With an increase of 8.2 percent over Q2 2020, the EU food and drink industry began to recover (Figure 9). In comparison to the previous quarter, turnover rose by 5.9%. The food and beverage industries only lost 0.4 % year over year in Q3 of the previous year, indicating that they have nearly recovered to pre-crisis levels. Similarly,

the total food and beverage industry's third-quarter turnover was just 1.1 % lower than the third quarter of 2019. Year over year, jobs in the food and beverage sectors decreased by 1.2 percent in the food industry and 2.2 percent in the beverage industry. Food has become the most competitive in retail, compared to the first wave, which has also resulted in a rise in job opportunities. Year over year, jobs in the food and beverage sectors decreased by 1.2 percent in the food industry and 2.2 percent in the beverage industry. The food industry, like the first wave, has been the most competitive in retail, increasing jobs by 2.4 % over the previous year (FoodDrinkEurope, 2020).

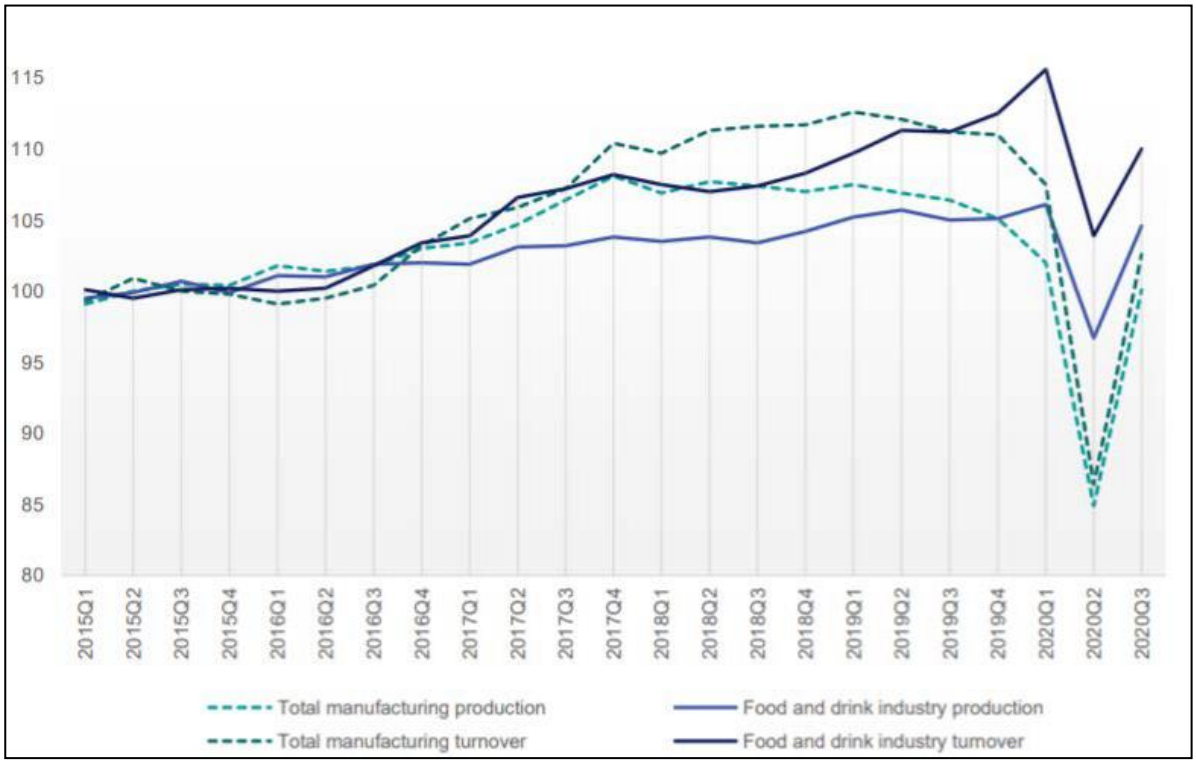


Figure 9: Quarter-wise production and turnover of EU Food and Drink Industry from 2015 to 2020
Source: (FoodDrinkEurope, 2020)

2.8. Textiles and Fashion Industries.

The European textiles and fashion (T&F) industry employs 1.7 million people and is made up of around 170,000 businesses, 99.8% of which are micro and SMEs. The industry generates about €180 billion in annual revenue. In recent years, the industry has undergone a transformation in which it has reduced its supply of simple, mass-market goods in order to vertically integrate and concentrate on higher-value-added items such as technological and industrial textiles. Short- and long-distance mobility constraints have had a significant impact on this labour-intensive and internationally interconnected industry. The global health crisis, as well as government responses, resulted in a decrease in demand and significant disruption in apparel supply chains at the start of 2020, resulting in cross-regional spill over. (European Commission, 2021).

Because of China's role as a major supplier of textile inputs, trade disruptions had a ripple impact across the entire global economy, including the EU's. In Q1 2020, European output dropped by over than 10% compared to 2019, with a 38 percent gap in the textile and 57 percent gap in the apparel subsectors, suggesting a decline in overall supply. In terms of employment, the T&F labour market experienced only a marginal setback in the early months of the crisis, with a 1.5 percent decline in textiles and a 4.9 percent drop in clothing across the EU in comparison to 2019, thanks in part to national-level employment regulations. Although traditional Chinese textile imports fell, imports of specific sanitary products rose, especially masks, which surged from €0.5 billion to €12 billion between 2019 and 2020. Furthermore, several apparel companies in specific national industries moved a portion of their existing product lines to new product categories, such as sanitary/masks, over the course of the year, signalling the start of supply chain manufacturing transition in this industry sub-sector (IMF, 2021).

Owing to lockdowns that provoked the closure of stores in many countries, demand for the apparel sub-sector dropped sharply, with retail sales in the EU falling by 18.8% in the first quarter. According to a survey conducted between March and April 2020, 60% of European textile companies expect sales to drop by more than 50%; 70% are experiencing severe financial difficulties, and 80% of them have decreased their workforce, at least temporarily. Despite the decline in retail sales, online sales in some EU countries exceeded previous peaks, reflecting a change in consumer behavior toward e-commerce that will continue in 2020. However, such a shift to online shopping was insufficient to counter the industry's overall revenue decline (EURATEX, 2020).

After an unprecedented drop in April, the industry began to rebound in Q3 2020, but at a slow rate, as EU government restrictions were eased over the summer months. In the textiles and apparel sub-sectors, output increased by 25% and 33%, respectively, from Q2. Sales figures increased as well, with a 62 % increase in total retail

sales from Q2. Nonetheless, the industry's year-over-year growth rates are lower than in 2019. Clothing production and retail sales fell 15% and 9.4%, respectively, while textile production and retail sales fell 7% and 9.7%, owing to a decline in demand to purchase garments (absence of events and an unsatisfying shopping experience due to restrictions. By the end of the year, job patterns had deteriorated, with losses of 2.9 % and 7.5 % for the respective sub-sectors in Q3 2020 (EURATEX, 2020).

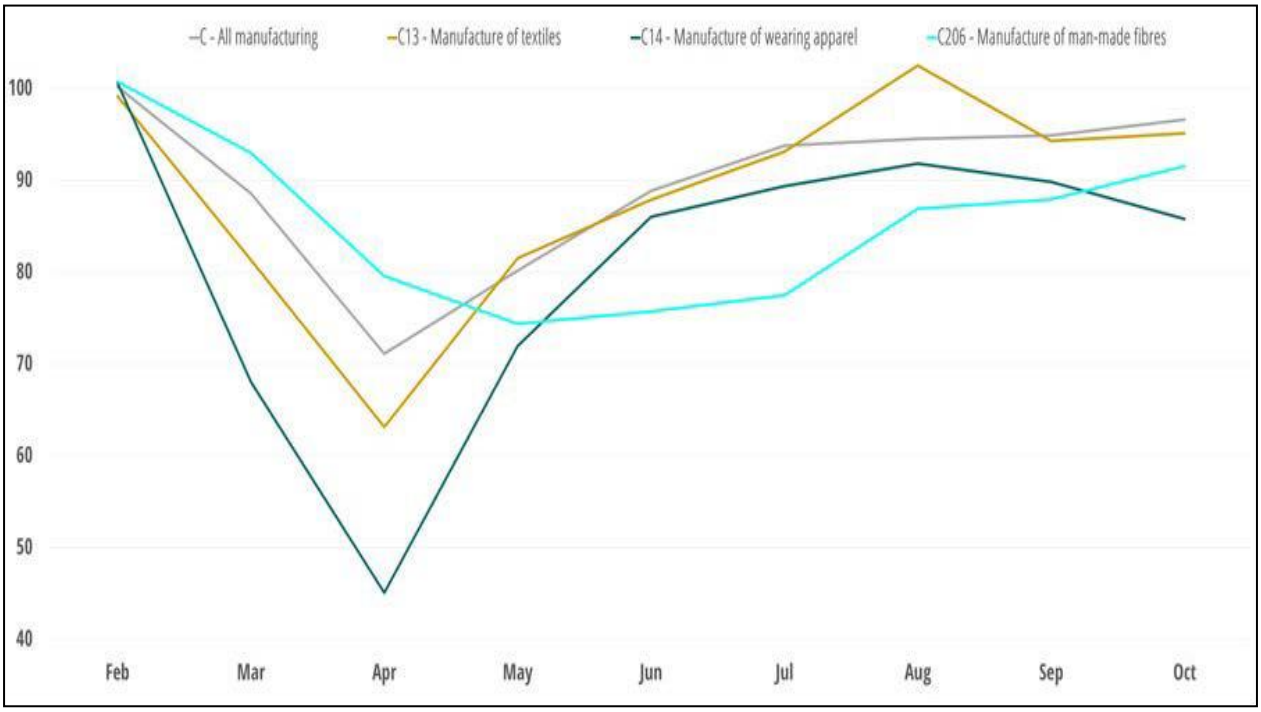


Figure 10: Month-wise output of EU T&F Industry
Source: (EURATEX, 2020)

2.9. Recovery and Alternative solution.

There are significant variations in output within the above-discussed industries. A significant portion of the digital sector, as well as the healthcare industry, has done well. Following the recession, the chemical, manufacturing, and food and beverage industries are expected to recover in a V-shaped pattern. In spite of the initial shocks, both car and textile industries are likely to be recovering following the easing of restrictions. Industries relying on human interaction, such as the aviation industry (f.eg.tourism activities, mobility), have been hit hard by the pandemic, and they are likely to continue to endure this for a long time. The industry-wise recovery pattern is reflected in figure 11 below.

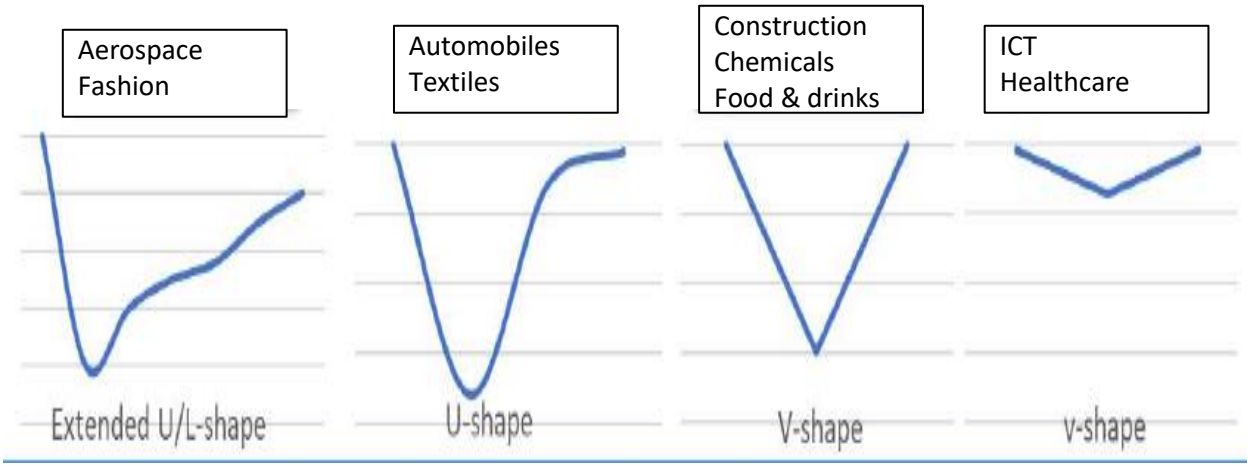


Figure 11: Industry-wise recovery pattern in EU
Sources: (European Parliament, 2021)

The COVID-19 pandemic has had a severe and widespread impact on the labour market across the EU. Lockdown restrictions were introduced across the EU at the end of February, and they were eventually lifted starting in mid-May. The dimension of the economic consequences and redundancies occurred in Q2 of 2020, despite the fact that the exact dates of easing lockout restrictions varied. Temporary jobs, the young, and employees with a low level of education all saw their employment decrease the most, according to Eurostat and the authors' estimates (2021). Higher education jobs were largely preserved by the pandemic, while the workers with a lower education or no education at all saw a significant fall in employment. Similarly, as opposed to older employees, young workers were disproportionately affected. Women's employment has also decreased more than men's, though the gap is minor. Temporary workers had the most job losses out of all contract forms (figure 12, a and b).

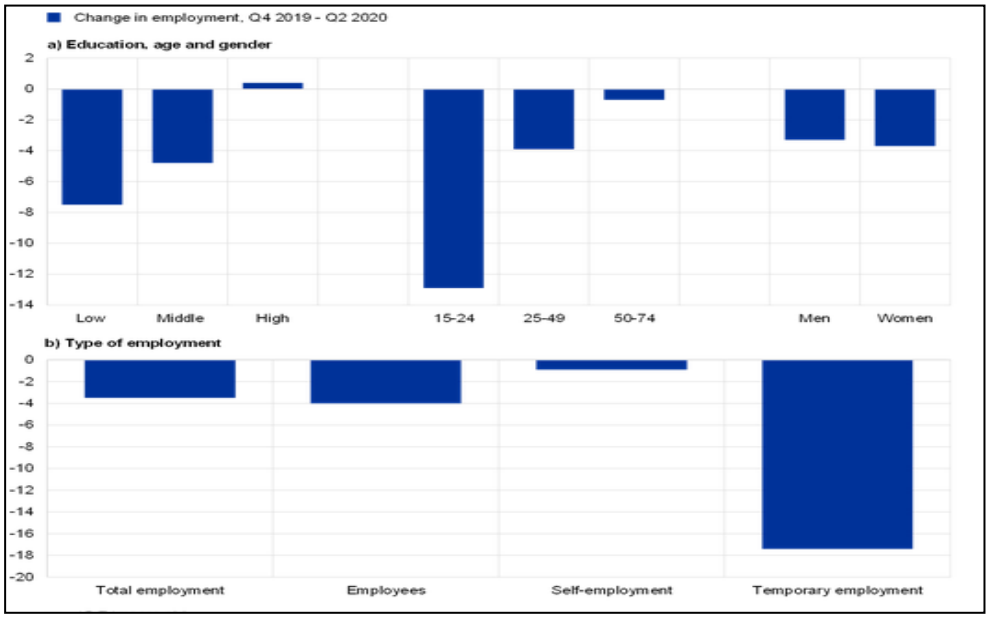


Figure 12: Shift in EU's labour market in the first half of 2020
Sources: (Eurostat and authors' calculation, 2021)

S.Charles et al. (2021) claim that teleworking might not the remedy to this economic downturn and that many tasks can not be executed remotely. They underline the fact that especially for manufacturing goods, human presence is fundamental. Kerr and Thornton (2020) even consider working remotely as not an achievable working method for many employees, especially for the ones that are less skilled as the nature of their job expects them to be at their workplace.

Yet, stay-at-home policies' financial and social burdens may be reduced by remote working. As a result of the coronavirus crisis and related policies, teleworking has become more widespread. More than 33% of European employees started to telework as a result of the pandemic. In some industries and for some workers, particularly those with advanced degrees, this is likely to have increased job opportunities and working hours. Since a large number of those who worked remotely during the pandemic had previously teleworked, studying the distribution of teleworkable jobs prior to the pandemic may provide insight into the dynamics of the EU labour markets during COVID-19. Teleworkable staff accounted for one third of employees and around 46% of annual earnings in the EU in 2019, showing that remote working is more normal in high-paying employment. The results are comparable to those in the U-S, where teleworking is suitable for 37 percent of employees and 46 percent of salaries (Anderton et al., 2021). In the EU, the ICT industry employs the most teleworkable staff, while agriculture employs the least. Teleworking-friendly jobs represent 83 percent of employees and 87 percent of annual earnings in the ICT industry. Only 7% of agricultural workers will work from home, but their earnings account for nearly a fifth of total earnings in the industry. Around 30% of total euro-area employees work in industries where more than 40% of jobs can be executed from distance, such as education, financial operations, public administration, real estate, and other administrative activities. The remaining

70% of workers are spread through industries, with just 25% of employees having the ability to work remotely (European Central Bank, 2021). Furthermore, in the EU, less than 10% of potential teleworkers report working from home on a daily or irregular basis, meaning that two-thirds of workers are unfamiliar with remote work (En-Contact. 2020).

3. The acceleration of digitalization and automation and the growing importance of teleworking

The jobs of many workers are at risk because COVID-19 sends economies into recession around the world and even some already lost their jobs around the world. As per the Asian Development Bank (ADB) report published in May 2020, In a 3-month containment scenario, the COVID-19 pandemic is expected to cost the global economy between $5.8 trillion and $8.8 trillion, with Asia and the Pacific being responsible for over a third of global economic losses. According to these calculations, between 158 million and 242 million fully active workers have lost their jobs worldwide, with Asia and the Pacific accounting for approximately 70% of these job losses (ADB, 2020).

However, not all jobs are impacted by the pandemic in the same way; some businesses are even prospering. Indeed, international tech behemoths like Microsoft, Apple, and Amazon were part of the the top-10 stocks by market capitalization in Q2. Other companies are also flourishing and looking to hire. Some companies use cutting-edge technology, such as contactless internet shopping and food delivery, 3D printing for personal protective equipment, and video conferencing applications like Zoom (Mirza, 2020).

In fact, rapid technological shifts and increasing automation have resulted in job segregation and wage disparities among employees as a result of the pandemic, as these innovations have put manual and routine jobs at greater risk of being replaced. Indeed, COVID-19 effects are hastening trends that have already resulted in the displacement of middle-skill workers, as well as a reduction in their working hours and salaries. Old skills are more likely to depreciate and become redundant as digital transformation accelerates. Staff in their later years are at risk of slipping into low-wage, low-skilled occupations (Park & Inocencio, 2020).

Without a concerted effort and proactive policies, COVID-19's disparate effects on employment would disproportionately affect the most disadvantaged people and communities. They will face higher unemployment, financial losses, and health threats, exacerbating social disparities and undermining efforts to achieve inclusive growth. Breaking and reversing the vicious cycle requires an understanding of the correlation between technology and work polarization, how COVID-19 exposes middle-skilled workers to job displacement and exacerbates job polarization, and what policy priorities should be set for the post-COVID-19 era. (Park & Inocencio, 2020).

3.1. Impact of Digitalisation on Labour Market.

Since the first industrial revolution, digitalisation and its net effects on employment have sparked intense debate. While technological advancements improve efficiency and production, opinions differ on whether they create or eliminate jobs. Jobs in the agriculture sector were replaced by machines as a result of rapid industrialization in the 1960s, but jobs in other sectors were developed. The fourth industrial revolution's technology improves the productivity and performance of both capital and labour, enabling them to be substituted for certain tasks (Acemoglu & Restrepo, 2019). Fear of job loss as a result of technology and computers started in 1900, when farms became more mechanised and farmers' share of jobs fell from 41 percent to 2 percent in the U.S, as well as in Japan in the 1960s when it became economically feasible. Even though technology has replaced some workers, it has not fully eliminated employment (Bowen 1966).

Rather than eliminating workers, technology shifted labour away from agriculture and into non-agricultural industries. Likewise, the introduction of manufacturing machines has had both positive and negative effects on the labour market. In 19 countries that are members of the Organisation for Economic Cooperation and Development, a rise in productivity was related to an increase in employment between 1970 and 2007. (OECD). Between 1993 and 2007, robot adoption was related to higher labour productivity growth without having a negative impact on low-skilled labour hours in 17 OECD countries. (Autor and Salomons 2017).

On the contrary, demand for labour had even decreased, particularly for physically demanding, repetitive, and cognitively monotonous work. Increased use of automated machines had a negative impact on both employment and revenue between 1990 and 2007, especially in manufacturing (Acemoglu & Restrepo, 2018).

Frey and Osborne (2017) estimated that by 2033, 47% of employees will be automated, affecting employment in transportation and supply chain, as well as administrative staff. They expect salaries to fall as a result of job losses due to automation. According to ADB (2018), technological change alone resulted in a 66% decrease in jobs in developing Asian countries between 2005 and 2015, although other technological impacts remained constant.

3.2. Job Polarization and Automation

Economic research looked into the causes of work polarization and proposed the theory of skill-biased technological change. As a result of this transition, skilled labour productivity has increased more than unskilled labour productivity, benefiting skilled workers more than unskilled workers. Indeed, some argue that earlier predictions of job losses due to automation are distorted upward because they include all

positions and the vast majority of employees are still working in jobs that are complicated to automate. (ADB, 2020)

Arntz et al, (2019) report that just 9% of workers in 21 OECD countries are at risk of automation, based on a task-based approach. Job segregation forces middle-skilled workers into lower-paying jobs, driving low-income workers' salaries even lower and expanding the wage disparity between high- and low-wage workers. Employment fragmentation isn't just a problem in developed countries; it's also a problem in developing countries. The COVID-19 pandemic and the resulting strict containment measures have impacted all employment, but some sectors and jobs have been hit harder than others. Labour intensity (traditional services such as restaurants and retail stores, as well as labour-intensive sectors), low ability (manual and routine) work and informality seem to be at play (inadequate employment protection). According to the ILO, the COVID-19 crisis has had the greatest impact on accommodation and food&beverage services, retail trade, and real estate and business activities and wholesale and retail trade (ILO 2020).

Automobiles and textiles, clothes, leather, and footwear, which account for 16 per cent of total jobs in the country, have also experienced significant domestic and global supply chain disruptions. On the other hand, employment in some industries has held up reasonably well, especially in the tech and pharmaceutical industries. Since the epidemic started earlier this year, several workers from major tech companies, such as Facebook or Google have been working remotely.

COVID-19 will almost certainly result in a digital revolution of workplaces and employment. The importance of technology in mitigating the impact of COVID-19, not just on health but also on economic outcomes seems crucial to highlight. (ADB, 2020)

Cutting-edge inventions, like ‘artificial intelligence, big data, drones, 5G, robotics, automated vehicles, and blockchain’ all proved to be winners during the pandemic.

In the post-pandemic era, digital resources and technology will dominate in the educational sphere, as well as in the corporation and production sphere. Since more enterprises and citizens started using digitalization tools to interact during the pandemic, the world after COVID-19 would depend on digital solutions even more than before the crisis. Concerns about income disparity, inequality, and inadequate social security are increasing as a result of employment fragmentation and the loss of middle-skill workers as digital transformation accelerates. On the other hand, technological innovation pressured organizations to encourage employees to work from home and use teleworking (Semuels, 2020).

3.3. Teleworking

Telework is described as the use of information and communication technologies (ICTs) such as mobile phones, tablets, laptops, and desktop computers for work done outside of the office (ILO, 2019). In other words, telework is work that is performed using ICTs but takes place outside of the physical location of the employer. Teleworking is possible if both the boss and the employee agree. Aside from agreeing on the job location (at the employee's home or elsewhere), there are many other aspects to iron out, such as working hours or a schedule, communication mechanisms to be used, work to be done, supervisory procedures, and reporting arrangements. Teleworking is not generally described to include those who operate in the platform or gig economy; for example, a freelancer who operates mostly from home might be classified as a home-based worker rather than a teleworker under the terms of ILO Convention 177 on Homework. Now, using an example, this chapter will create a link between the above-mentioned literatures and their real-world application. This study concentrates on Japan to elaborate the acceleration of digitalisation and automation and its importance in teleworking because as per the OECD (2020) report, Japan is leading the world in the potential for jobs displaced by automation and this is going to be a new reality. In addition, Japanese technologies are far ahead of other countries, during this pandemic many useful Japanese advanced technology and Artificial Intelligence (AI) applications have emerged and demonstrated their utility during the period. These applications demonstrating that, even during the pandemic, technical advancements have not slowed and that revolutionary ideas will flourish even in the most difficult of circumstances. AI in the medical field has shown several applications that could aid in the global battle against COVID-19. Within the broad spectrum of possible AI applications, communication is another positively affected area. In this challenging social distancing reality, remote collaboration tools like Microsoft Teams aided communication.

3.4. Case Study: Teleworking in Japan

In March 2020, COVID-19 has declared a pandemic. Japan's national boundaries and towns have not been fully shut down. Rather than imposing a full lockdown or trying to regulate the population by fines, the government's policy as a solution has been to ask people not to leave their homes without penalty, and to promote telecommuting and telework. Except Sweden, this is unheard of among developed countries. At the same time, among developing countries, Japan is noted for having the lowest usage of telework (Okubo, 2020). In November 2019, 16.6% of Japanese employees used telework, according to the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) (2020). Despite the government's and companies' heavy promotion of telework during these last years, the utilization rate kept a low level in Japan. As a result, Japan is a fascinating case study for examining how the shock of the COVID-19 pandemic prompted the promotion of telework.

The following factors that could explain why Japan has a lower rate of telework than other countries are ‘epidemic situation, soft lock-down, and the Japanese corporate culture’. Compared to other OECD nations, Japan has seen far fewer COVID-19 patients and deaths. As a result, workers' concerns about the disease risk were lowered more than in other nations, and they did not have a strong motivation to engage in telework. (Okubo, 2020)

Furthermore, the Japanese authorities chose not to impose a lockdown, allowing economic activity to continue. The government has simply recommended that employees use remote working without enforcing any fines. The Japanese soft lockdown is much less severe than the one other countries. Hence, only 11% of Japanese businesses implemented a telework scheme in 2019. (MLIT, 2020). Most Japanese companies and businesses had no experience with telework before the spread of COVID-19. As a result, many companies' working conditions, such as the IT climate, job structure (flextime system), and wage system, were not conducive to telework. Furthermore, the Japanese corporate culture stressed the importance of collaborating in a common place, using traditional papers, and a face-to-face communication. Yet, telework has recently gained popularity as a way of changing work ethics and lifestyles (Gajendran and Harrison, 2007).

Increased production has long been promoted by Japanese leaders as a way of improving economic prosperity. It has now become much more the case as Japan’s reduction in birth rates and surge in life expectance have declined domestic workforce (15 to 64 years) to 59.7% of the overall population. Despite efforts to expand the labour pool by recruiting more women, retirees, and foreign workers, Japan's demographic shift threatens to put a stop to GDP growth for the next decade. While the Japanese telework framework completely allows telework, it is seen as a way to boost labour productivity and efficiency by reducing commuting and increasing working hour flexibility, allowing employees more time for their personal lives (Cabinet Office. 2020). Rather than being promoted as a means of enabling healthier lifestyles, telework is now being promoted as a means of preventing the spread of the virus. Also, the Japanese government asked people to be cautious when leaving their homeplace, as well as requesting that businesses limit their operations or close completely. Instead, the Japanese government has mandated that all companies support telework. There have been a variety of instances where working remotely has been implemented at the request of employees. It's also possible that, even though some jobs and sectors aren't suited for this, many employees have been obliged to do so. It is incredibly difficult to strike a balance between economic activities and anti-infectious disease initiatives while still coping with administrative and environmental issues.

According to the Centre for Economic Policy Research, Survey was conducted in Jan, Mar and Jun 2020, Teleworkers are more prevalent in information service industries than in face-to-face service industries or among manual laborers. Communications and information services (46%) and information services and research (44%)

have the highest telework use rates, respectively, while restaurants and accommodation (5%) and medical care and welfare (3%) have the lowest (Figure 13).

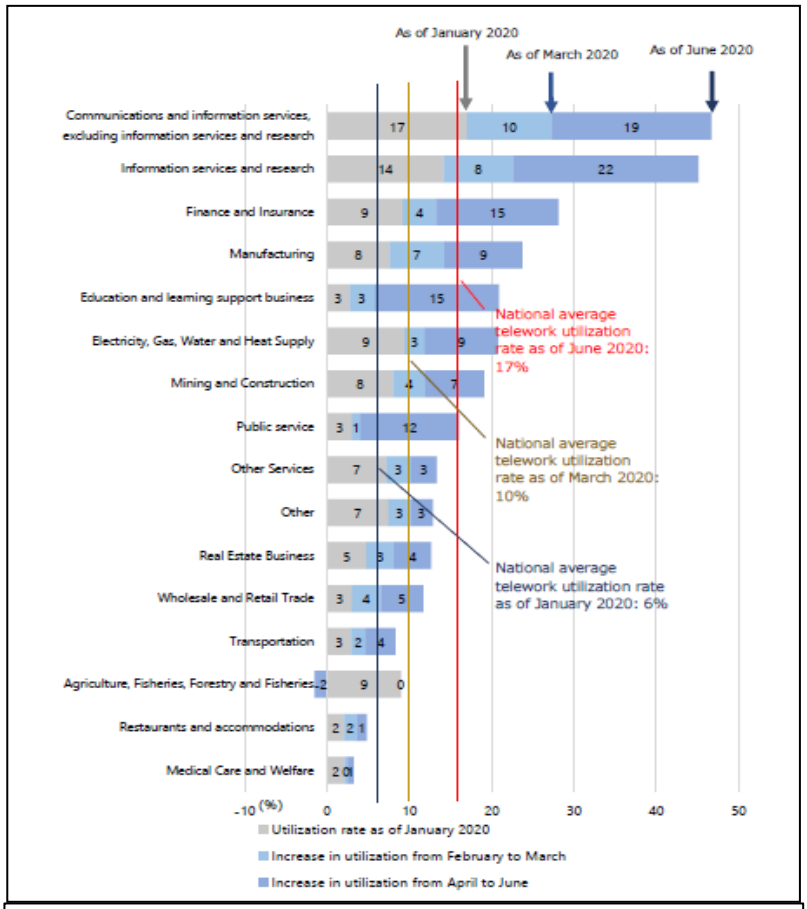


Figure 13: Rate of utilization of telework by Japanese industries
Sources: (Okubo, T. (2020))

According to Okubo (2020), 'data processing workers (49%), management consultants (46%), and researchers (39%)' are among the most likely to use telework. 'Doctors, dentists, veterinarians, and pharmacists, carrying, cleaning, packaging, and related workers (3%), food/drink and customer service workers (2%), and manufacturing process industry workers (2%)' are among the least likely (Figure 14). This means that telework is used more frequently in information-related industries and occupations, whereas telework is not suitable for services implicating human physical interaction or manual tasks (Figure 14).

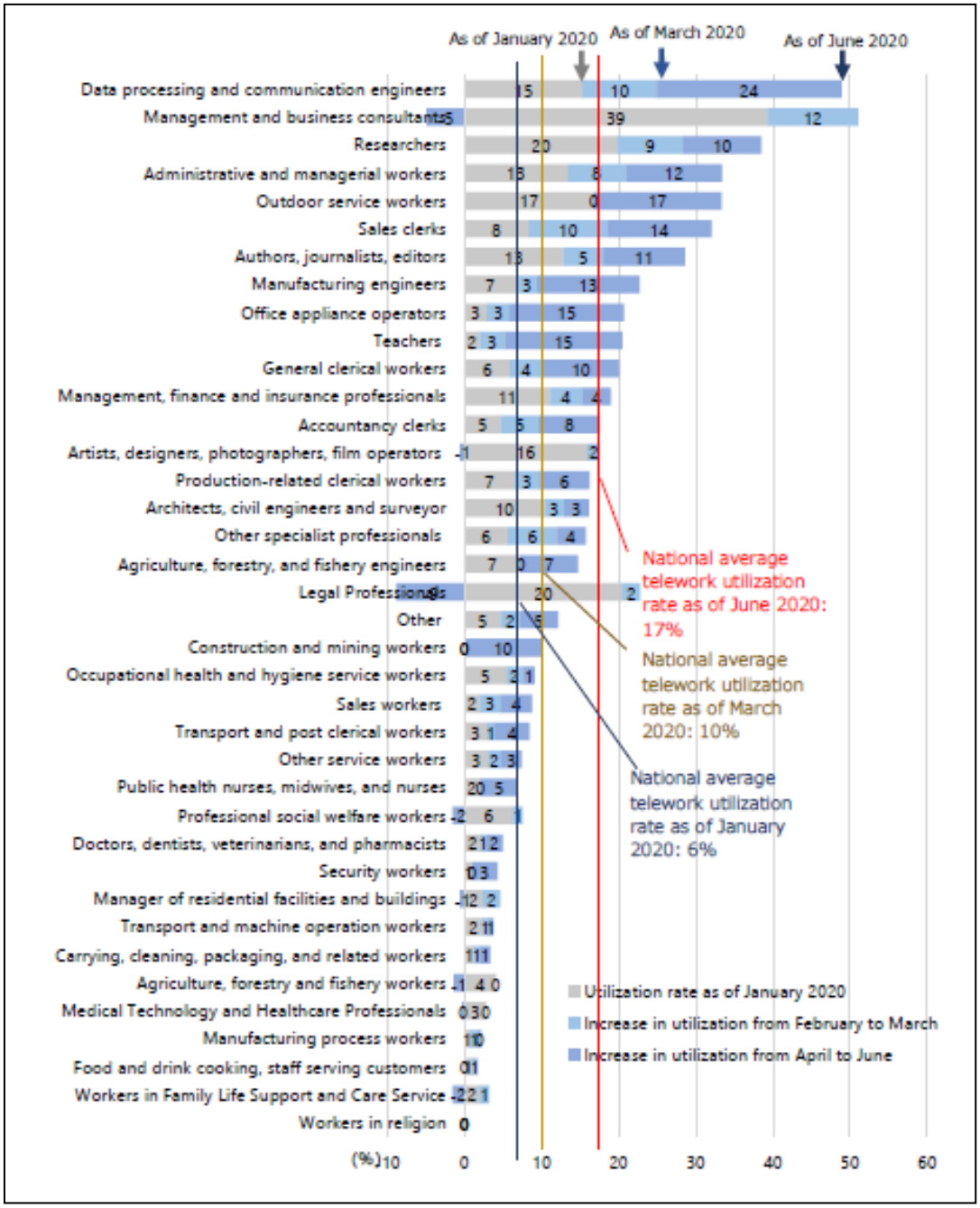


Figure 14: Rate of utilization of telework by Japanese occupations
Sources: (Okubo, T. (2020))

In addition, with Artificial Intelligence as one of its key technologies, Japan hopes to maintain its role as a major player in the high-tech and consumer electronics sectors. Japanese are now focusing more on Artificial Narrow Intelligence (ANI), which is described as "machines that can learn, reason, and act for themselves". This optimism is paired with the Japanese government's Society 5.0 vision for the future of society. Society 5.0 refers to a society that is highly reliant on emerging technology to solve social problems such as ageing and natural disasters such as floods, typhoons, landslides, and earthquakes. Society 5.0 aspires to meet the unique needs of each person through AI technology (Kuczynska, 2019).

This vision serves as the North Star for Japan's mid to long term plans, including the R&D plan, Innovation Strategy, and, among other things, Japan's 10-year AI strategy, which outlines three focus areas for integrating AI into everyday life. As part of its roadmap for AI integration in society, the Japanese government has identified three focus areas. The first is Productivity, which focuses on an AI-integrated supply chain that predicts and matches customer needs. One target is to use autonomous robots in large numbers to provide dependable output customized to customer demands, allowing them to get the amount they need when they need it, resulting in a zero-waste society. Health, Medical Care, and Welfare is the second priority sector. Nursing robots will provide services and nursing care in the future, just like family members. One of its

aims is to enable you to build your own body, with artificial organs and sensors replacing body functions. The third area is AI in Mobility, which will enable everyone and anything in both physical and virtual space to move easily, safely, and environmentally friendly. From minimizing accidents by autonomous vehicles to removing the need for transportation, the Japanese government is heading toward a future where cyber and physical space are combined. Virtual mobility is exemplified by digital tourism and virtual office spaces (SCAIT, 2017).

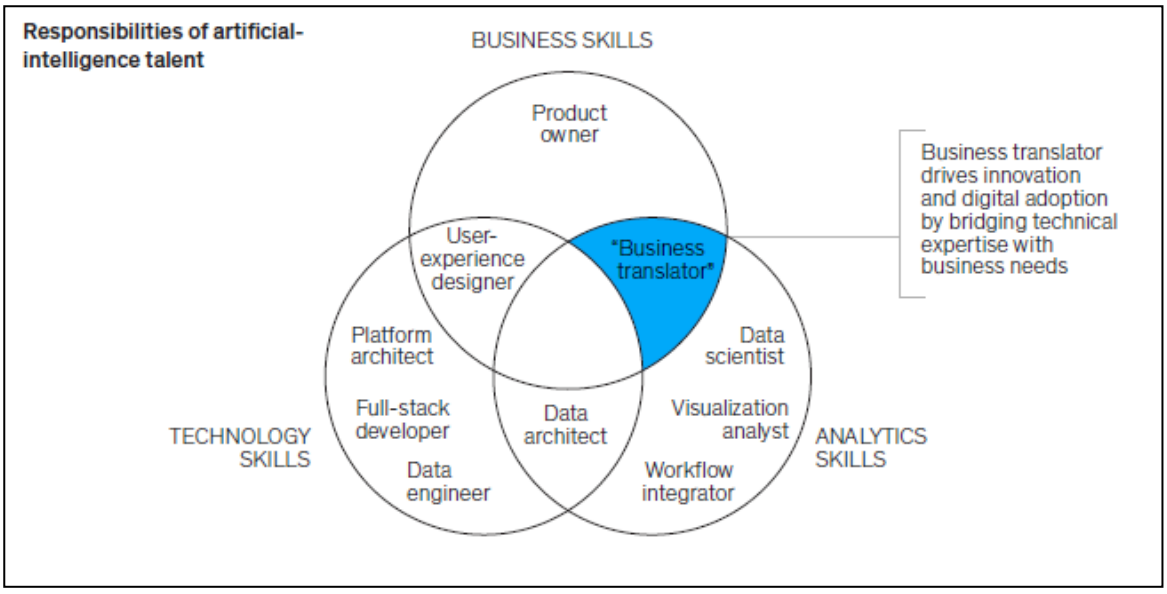
Although most people will perceive COVID-19 as having a negative impact on the global economy, Japan's ICT exports have increased due to strong demand for 5G and data centres (Cabinet Office, 2020). A broad variety of AI technology's possibilities have piqued people's interest. The Japanese government is planning to devote a larger portion of its R&D budget to core technologies that will support Society 5.0, such as artificial intelligence (Horii & Sakurai, 2020). As compared to the AI strategy, it appears that the virtual dimensions of the Mobility pillar, such as connectivity, are being boosted, as are the Health, Medical Care, and Welfare pillars. The virtual mobility and communication aspects of AI technologies are discussed in this section, and the latter will be discussed in the following paragraph. Telework is the first use of AI in society. Despite the government's support for teleworking as a means of reducing traffic congestion over the last year, Japanese businesses have been reluctant to embrace it (Figure 13 and 14). The pandemic necessitated a reimagining of employees' home environments to accommodate teleworking, as well as (re)introducing us to a slew of (new) networking innovations and advancing the AI strategy's virtual mobility goals.

AI and other advanced technologies can be used as an enhancing and translating technology to improve online communication tools. It can, for example, use machine learning to detect background noises such as a vacuum cleaner and filter them out during a conversation. (Protalinski, 2020). The lowering of regulatory barriers is another trend that is assisting AI's incorporation into society. Many analogue ways of working had to go digital to preserve social distance, boosting digital initiatives like telemedicine and remote education to be embraced. Because of the need to enable digital alternatives, AI embedded technology has the potential to improve connectivity, protection, and customer experiences.

Artificial intelligence is critical in our battle against COVID-19. Artificial intelligence can be used to detect anomalies, quantify infection probabilities, analyze customized content, and counter false information spread on social media. Satellites, GPS, and data from social media can all be used to aid in the recovery of the economy. In this modern world, where humans must adapt to a new way of life, AI will have clever solutions for new problems. This takes us to the second priority area of Japan's AI strategy: wellness, medical care, and welfare. By predicting the effectiveness of both old and new drugs, AI plays a vital role in our ongoing quest for a vaccine (OECD, 2020). Some of these are being developed in Japan.

A COVID-19 countering software has been introduced by Fujitsu (a Japanese multinational IT company) in the form of an AI hand washing display. It detects complicated hand signals, such as whether or not people use soap, and encourages staff in the healthcare, hotel, and food-service industries to follow the health ministry's six-step hand-washing protocol (The Japanese Times, 2020). Glory Ltd offers a solution to the problem of facial recognition software failing to recognize masked faces. Its technology can identify faces concealed behind masks (NIN, 2020). The last peek into the Society 5.0 imagined future is Tokyo's robot hotel, which welcomes patients infected with the virus. In circumstances where infection risk is high, this practical application of AI-enabled robots will assist or even replace care staff. All of these results show that the pandemic is more than just a sad state of affairs. To overcome this global challenge, the uncertainty has sparked new innovative projects as well as practical AI solutions (The Japanese Times. 2020).

250,000 people must be educated annually in sectors like data science and AI, according to Japan's AI strategy for 2019. Employers often need business translators, people who can help change operations by aligning talent and technology with business goals. Successful market translators are mindful of industry trends and customer desires while evaluating potential innovation. They contribute to worker’s adaptation to digitalization&automation and seek for alternatives to increase productivity while minimizing disruption. The best way to meet the urgent demand for people with these skills is to help skilled staff learn more digital skills. (figure 15) (Horii & Sakurai, 2020).



According to the MGI study, Japan has a higher automation capability than countries like Germany and South Korea. According to researchers, automation in Japan could displace about 56% of work activities, allowing companies to cut costs and raise productivity while dealing with a contracting workforce (Figure 16).

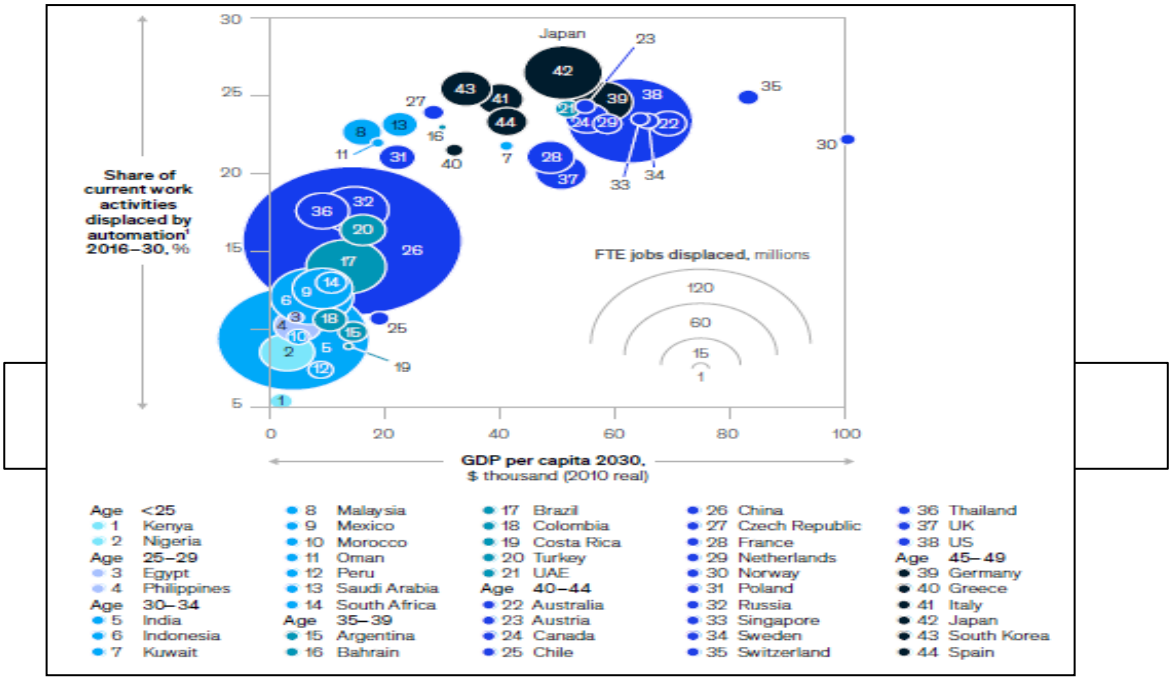


Figure 16: Japan leads the world by replacing jobs by automation
Sources: (Oxford Economics; World Bank; McKinsey Global, 2020)

COVID-19 has affected all facets of life, both at home and abroad. While Japan has had a low number of infections compared to other countries, it has not been without consequences. Despite its negative consequences, such as health problems and economic downturns, the ongoing economic and social crisis has some positive consequences, such as exposing future reforms and challenges and speeding up the process of finding solutions. Many businesses in Japan have implemented telework, which had previously been slow (Kuczynska, 2019). Even though the government's order for outing self-restraint has been removed, several businesses are continuing to create a versatile work atmosphere by implementing teleworking systems. Reviews of work process and progress management, which are needed for the implementation of telework, are expected to help resolve long-standing problems of work style change and low labour productivity. Furthermore, the quest for new business models by domestic companies, which is aimed at the new economy and society, could boost competitiveness through cooperation and collaboration with other businesses. The digitization of consumption, such as increased online spending and cashless payments, has been one way to limit contact with others (The Japanese Times. 2020).

The effect of COVID-19, in particular, is expected to draw attention to the government's goal of promoting cashless payments, as well as the medium- to the long-term growth of related industries. The COVID-19 crisis has had a major effect on the government as well. To deal with the economic blow, Japan's government has proposed the largest supplementary budgets in history, not only to improve the medical system but also to help industry and job continuity, as well as to boost domestic businesses. On the other hand, problems with the administrative procedure, which have been a concern for some time, have become more evident. Former Prime Minister Shinzo Abe directed that the framework be reviewed by central government ministries and agencies. Prime Minister Suga plans to make more attempts than ever before to streamline administrative processes, including establishing a new digital agency.

The quest for and adoption of new models, as well as the digital transformation of companies, customers, and administrative institutions, are not simply temporary changes in response to the virus. Instead, they will pave the way for economic and social change in the medium to long term. It will need to be closely monitored in the future. According to a JETRO questionnaire survey of foreign-affiliated companies in Japan, fewer than 10% of all companies expect to shrink or exit the Japanese market as a result of COVID-19. Many businesses intend to stay in Japan or expand their operations. 67.4 per cent of businesses continuing to do business in Japan cited "present market size" as the most appealing aspect of doing business in Japan, while 64.7 per cent cited "potential growth of related industries" (Cabinet Office, 2020).

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Furthermore, in the post-COVID-19 period of economic recovery, renewable energy industries, including decarbonisation, will remain a significant industrial field. Domestic companies, customers, and governments have been forced to rapidly adapt to changes as a result of this crisis. The current changes in Japanese society can provide opportunities for foreign and foreign-affiliated companies to grow their businesses (Martin, 2020). As a result, it is important to provide a thorough understanding of the changes that have occurred in society. Foreign companies entering the Japanese market with new technology and/or services, as well as their business development, are expected to accelerate digitalization and boost the productivity of the Japanese economy and society, resulting in further growth of the country (The Japanese Times. 2020).

4. How do global corporations have adapted to the COVID-19 transition?

4.1. Impact of COVID-19 on Global Corporations

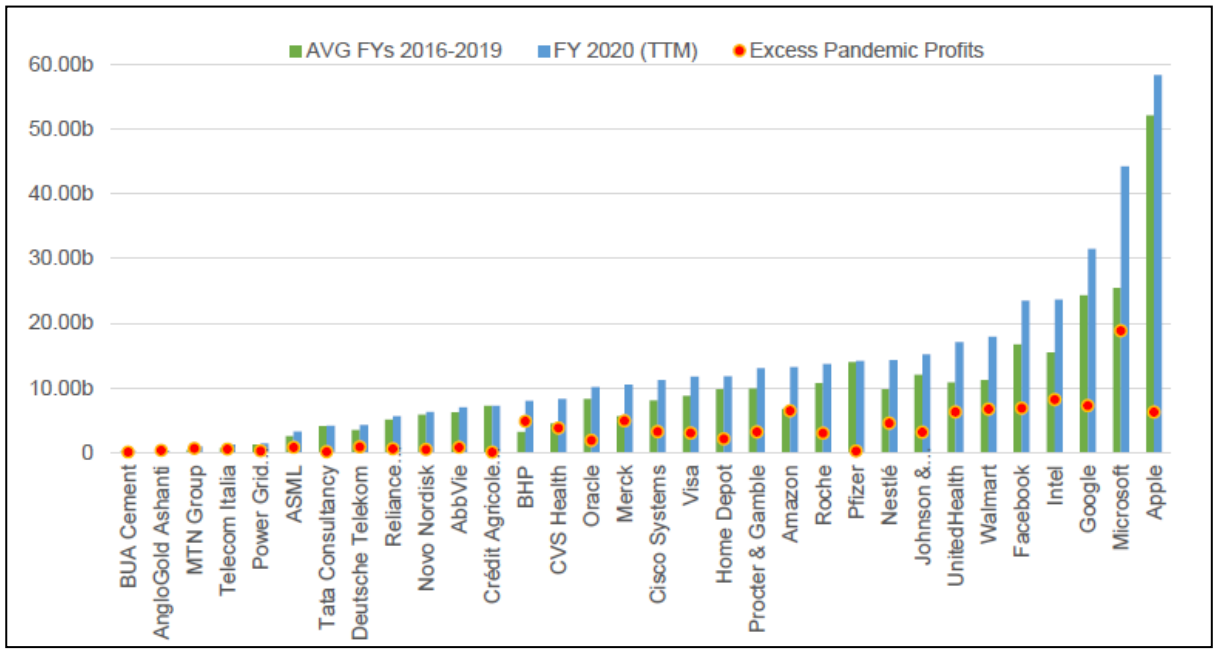
COVID-19 may have been disastrous for others, but it has also benefited others. Many large companies have thrived through the pandemic, although several small businesses and workers are suffering. Those in the technology, pharmaceutical, and consumer goods sectors have benefited from certain aspects of the pandemic, and their business models have benefited as a result (e.g. the demand for healthcare, the shift towards telework or the rise of e-commerce). Oxfam America published a new report earlier this year (Oxfam America, 2020) that found that Microsoft, Johnson & Johnson, Facebook, Pfizer, and Visa, among the top 25 most profitable US firms, are expected to make nearly $85 billion gains in 2020 than in all other recent years. The biggest part of these share dividends is expected to go to the world's richest individuals, including many billionaires. The report has been updated and extended to include several of the world's most powerful corporations from developed countries, India, Nigeria, and South Africa. According to Oxfam, 32 businesses are expected to earn $109 billion more in FY 2020 than they did in the previous four years. (Oxfam America, 2020).

The four major tech companies – Google, Apple, Facebook, and Amazon – are forecast to make about $27 billion more in pandemic revenues this year than in the previous year (Financial Times, 2020). Despite the fact that these four companies receive the most press, Microsoft is without doubt leader in excess profits during the pandemic, with Microsoft alone projected to earn approximately $19 billion more in surplus. Overall, these five 'GAFAM' companies are responsible for $46 billion in extra pandemic earnings. Pharmaceutical behemoths have also seen an increase in gains. The seven pharmaceutical companies in this study are forecasted to make a profit margin of 21% on average by 2020. Merck ($4.9 billion in mega-profits), Johnson & Johnson ($3.2 billion), and Roche ($3.3 billion) are all expected to make $12 billion more during the pandemic than in previous years (Oxfam, 2020).

4.2. Profit of Global Corporations.

Making a big, unsustainable profit during a pandemic is a worldwide phenomenon known as pandemic profiting. In Europe, corporations like Nestlé, Deutsche Telekom, ASML, and Telecom Italia are notable. The pandemic has also helped a number of large Chinese companies. During the outbreak, other huge corporations from developing countries such as Reliance Industries in India, BUA Cement in Nigeria, and MTN in South Africa emerge as big winners. Profits for the latter are predicted to increase by a whopping 169 per cent as a result of lockdowns across Africa for instance.

These excessive profits would not be a traced as a problem if they were broadly distributed and benefited to society as a whole. According to Oxfam, however, these 32 pandemic profiteers are projected to allocate 88 percent of their surplus profits to shareholders, the bulk of which are from higher socioeconomic groups. (Oxfam America, 2020) (figure 17)



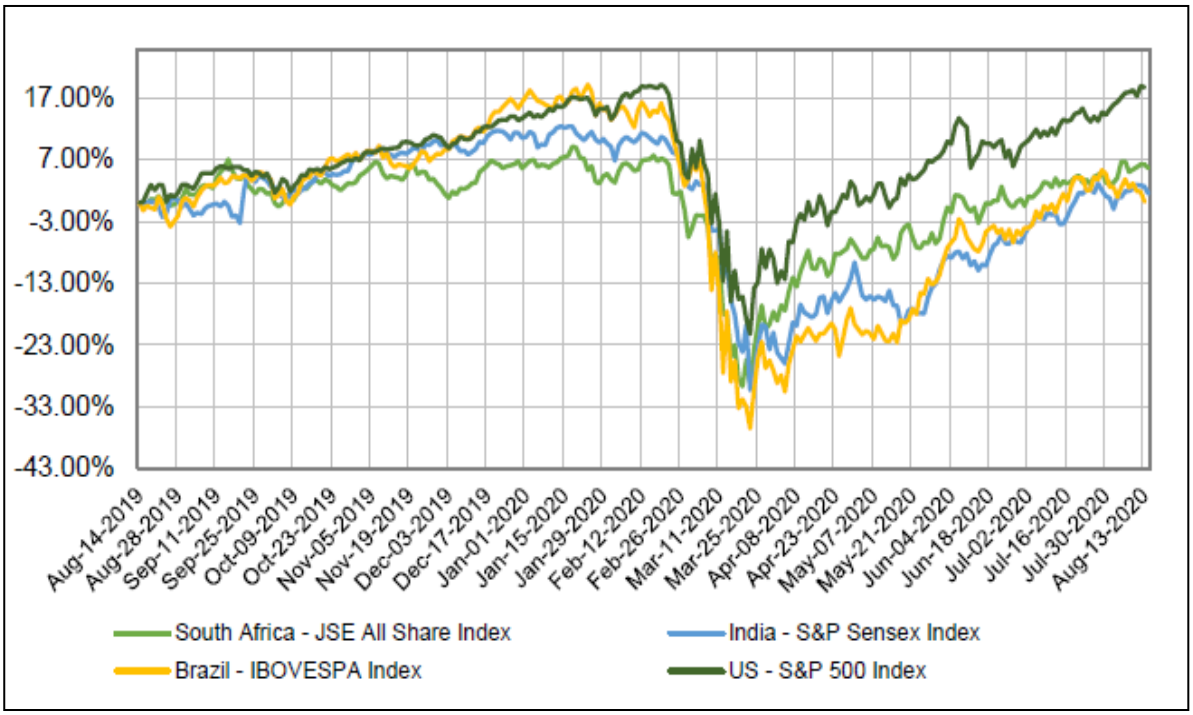
4.3. Profit sharing, Payout to Shareholders and Philanthropic donations by Global Corporations.

The majority of the world's most powerful shareholders in these private corporations are male billionaires from all over the world. The sudden rise of the wealth of the world's richest people, is a cause for concern, is due in part to the boom in pandemic income. 70 Between mid-March and late May 2020, the income of the top 25 billionaires increased by a whopping $255 billion. Billionaires (many of whom are affluent investors in big corporations) in the United States alone have seen their net worth rise by 792 billion dollars (Americans for Tax Fairness and Institute for Policy Studies, 2020). Putting things in context, many of the world's wealthiest have largely survived the pandemic unscathed, and in many instances, are wealthier and more influential

Figure 17: Pre-pandemic v/s pandemic profits of global corporations
Sources: (Oxfam, 2020)

than ever. Despite high unemployment and small-business closures around the world, stock markets seem to have recovered quickly. Since the start of 2020, the top 100 stock market winners have contributed more than $3 trillion to their market cap. This recovery demonstrates the shareholder-first paradigm's continued dominance, as well

as investors' selective confidence in large corporations' security. Importantly, this recovery ignores the plight of small businesses, which have been hit the hardest by the crisis. Even among publicly traded companies, a few top firms are reaping the lion's share of the gains. For example, COVID-19's economic instability has benefited the top six technology companies in the United States, all of which are led by men. They now account for a fifth of the overall value of the S&P 500. (figure 18).



Businesses all over the world have taken note of COVID-19. To help address the economic impacts of COVID-19, large corporations and billionaires have primarily relied on philanthropic giving. It is quite unsurprising given the preference of the majority of companies for charitable contributions to social causes (instead of tax payments, higher salaries or price advantages for suppliers). Corporate earnings and billionaire wealth, on the other hand, pale in comparison to the future good that a more reasonable, sustainable tax system or more equitable economy would offer. Let’s consider the United-States as an example. Despite the fact that corporate tax evasion cost the US $135 billion in taxes in 2017 (Kimberly, 2017), corporate philanthropy was less than $20 billion (Crisil, 2020).

Oxfam looked at the COVID-19 donations of the S&P Global 100 firms (2020). Despite the fact that more than half of the businesses announced their donations during COVID-19, the total donation in 2019 was just 0.32 percent of operating income. Corporate philanthropy should not be considered as the right way to the fight against the

Figure 18: Stock market performance in USA, Brazil, India and South Africa from Aug 2019 to Aug 2020
Sources: (Capital IQ, 2020)

pandemic, especially if we compare the actual needs with the huge amount of corporate profits. Furthermore, there is little transparency or reliance about how this money is spent or what it accomplishes.

4.4. Labour abuse cases of marginalized workers by Global Corporations

COVID-19 is a measure of a company's dedication to a reason other than short-term shareholder returns. The pandemic, according to optimists, is tipping the scales in favour of the multi-stakeholder model, in which a company's mission is to serve a wide variety of stakeholders, not only shareholders as it is used to. On the other hand, the reality seems to be less rosy. The necessity for businesses to be assuring to all stakeholders (especially during COVID-19) and to adhere to their core business values continues to be critical.

Oxfam (2020) has identified five industry practices that demonstrate how certain businesses intensified discrimination during the pandemic. This is focused on over 120 case studies involving over 400 businesses from around the world:-

- Promising to pay dividends to shareholders and executive compensation plans after receiving government bailouts;
- Neglecting to ensure the safety of employees and prevent labour abuses.
- Costs and risks are being shifted down supply chains.
- Taking advantage of government aid programs regarding their ineligibility or lack of merit.
- Trying to persuade the government to loosen regulations in the areas of the environment, taxes, and social security.

SME's are under financial strain, and authorities are offering relief funds to businesses, while large corporations pay out dividends to shareholders. These activities are now being scrutinized. A temporary moratorium on stock buybacks has been enacted in several nations, including France and the United States, for corporations receiving government relief funds. Few examples are mentioned below:-

- The UK government provided emergency loans to chemical giants BASF and Bayer, totalling £1 billion ($1.3 billion) and £600 million, respectively. Despite lower profits, Bayer shareholders approved a proposal to pay out €2.75 billion in dividends only weeks before receiving the capital, while BASF shareholders approved a plan to pay out €3.03 billion in gains in June, a significant increase over the previous year. In the first two years, the company's dividends were four times its profits.

- When paying workers with public funds, seven companies in France (Vivendi, Capgemini, Michelin, Publicis, Solvay, Veolia, and Vinci) paid dividends. Despite government demands that dividend payments be restricted, the CAC 40 companies paid out a total of €35–40 billion in dividends.

- Several major US companies, despite requesting government bailouts or laying off employees, stuck to their dividend payout plans. Employees at General Motors or McDonald's for example, have all been made redundant or have had their working hours or salaries cut. Other main actors like Caterpillar, Levi Strauss, Stanley Black & Decker, Steelcase, and World Wrestling Entertainment were among the companies that followed suit, paying a total of more than $700 million in cash (Scott et al., 2020).

- Dangote Cement, Nigeria's largest cement company, is accused of having fired over 3,000 workers without prior notice, despite the fact that the company is set to pay shareholders 136 percent of its earnings in FY 2020. (Sahara Reporters, 2020).

- After cancelling $150 million in orders, US apparel manufacturer Kohl's paid out $109 million in dividends, putting garment workers in Bangladesh and South Korea at risk. Despite the German government's funding and a government-backed furlough policy, BMW paid out over €1.6 billion in shares (McNamara, 2020).

The fact that some corporations are keeping shareholder payouts despite financial difficulties demonstrates how capitalism limits companies' ability to make long-term decisions that benefit them, let alone society. The prevalence of companies' irresponsible labour practices has been exposed once again by COVID-19. Companies around the world have prioritized immediate profits over employee well-being during COVID-19. Workers in low-wage jobs have been particularly endangered to be abused; the following are some examples from around the world:

- The mining industry has been exposed to labour violations and health threats. Hundreds of COVID-19 cases have been recorded in Peruvian mines, despite the high risk of infection. Mining sites in Congo, Mexico, and Guatemala were chastised during COVID-19 for their treatment of labour rights and public health regulations. (HRW, 2020; BHRRC, 2020; Brigada, 2020).

- Tele-performance, one of the world's largest call center companies, has been accused of infringing on employees' right to a healthy work environment. According to the complaint, employees in more than ten countries were reportedly subjected to retaliation (En-Contact, 2020).

- Food retailers have been targeted by workers as a result of their failure to provide appropriate health and safety services. McDonald's has been named in a class-action lawsuit claiming that it refused to meet US government protection guidelines on COVID-19, endangering employees and their families (Hals, 2020).

- Migrant staff in Qatar working to construct stadiums and facilities for the FIFA World Cup 2022 have faced pay delays and redundancies, apart from having worked in overcrowded environments, inadequate health conditions, and no sick leave (Pattisson, 2020).

- Food service firms have been accused of failing to give adequate treatment to their drivers, who are in jeopardy during the pandemic as there is a huge lack of unemployment benefits, health insurance, and sick leave. Deliveroo, for example, has been chastised in the United Kingdom for insufficient PPE and income support for riders. Due to insufficient worker security, Instacart has faced nationwide strikes in the United States (Lomas, 2020). During the pandemic in India, delivery services like Zomato and Swiggy faced similar difficulties ensuring health precautions (Brandom, 2020).

These cases are the product of companies that have developed their businesses on the backs of marginalized workers. Many governments have been complicit in these crimes by failing to protect jobs during this crisis. In the United States, the government has failed to support vulnerable farm and meat processing jobs. Despite the high risk of infection, the Peruvian government approved the continuation of mining operations. In India, labour laws have been weakened in an attempt to give businesses more flexibility.

4.5. Skill development and Business transformation by Global Corporations

Despite these realities, according to new research from the IBM Institute for Business Value, executives of these large global companies are now prioritizing all of these skills (IBM, 2020). The research's results indicate that another major change in priorities is likely in the next two years. These companies have made it clear that they want to prioritize employee safety and protection, cost control, and business agility. Big global corporations have high expectations for their transformation efforts. The benefits they most want from ongoing digital transformation are competitiveness and workforce resilience. A majority of companies are now transforming. However, it seems that a greater emphasis on transformation is coming at the cost of customer relationships and partnership opportunities. The COVID-19 pandemic has accelerated digital transformation for 59 per cent of the organizations as per the IBM survey. This cultural change is partly defensive: the top advantage attributed to transformation programs is cost reduction. The reliance on technology platforms grew, and those platforms, as well as the corporate teams that used them, produced results. It's not like new technology was found and introduced overnight; rather, the technologies that were already available were used to their full potential growth in various key factors are shown in figure 19.

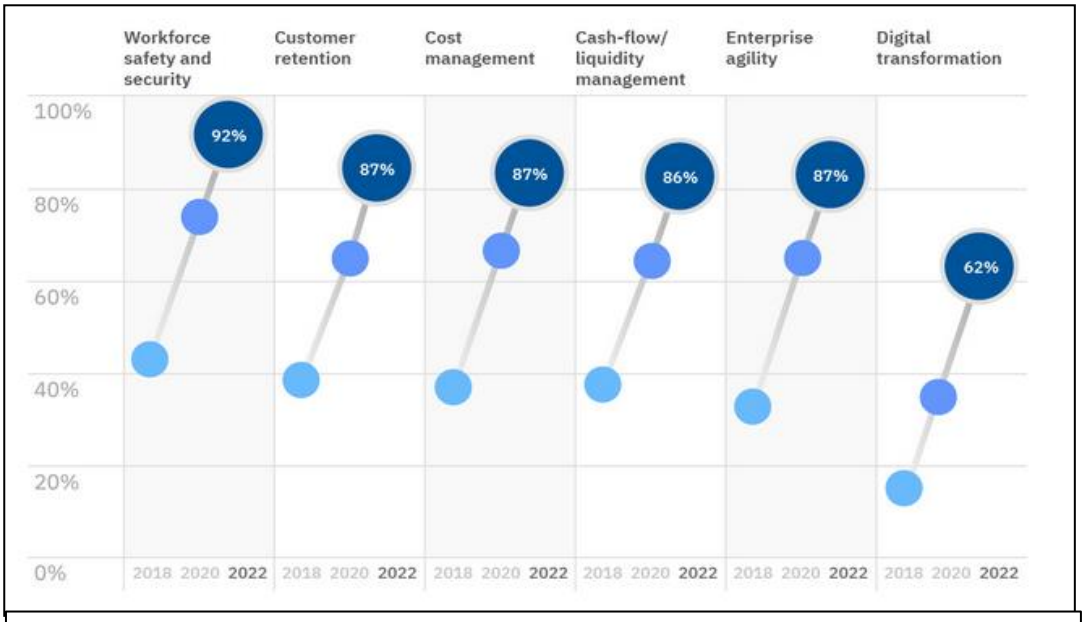
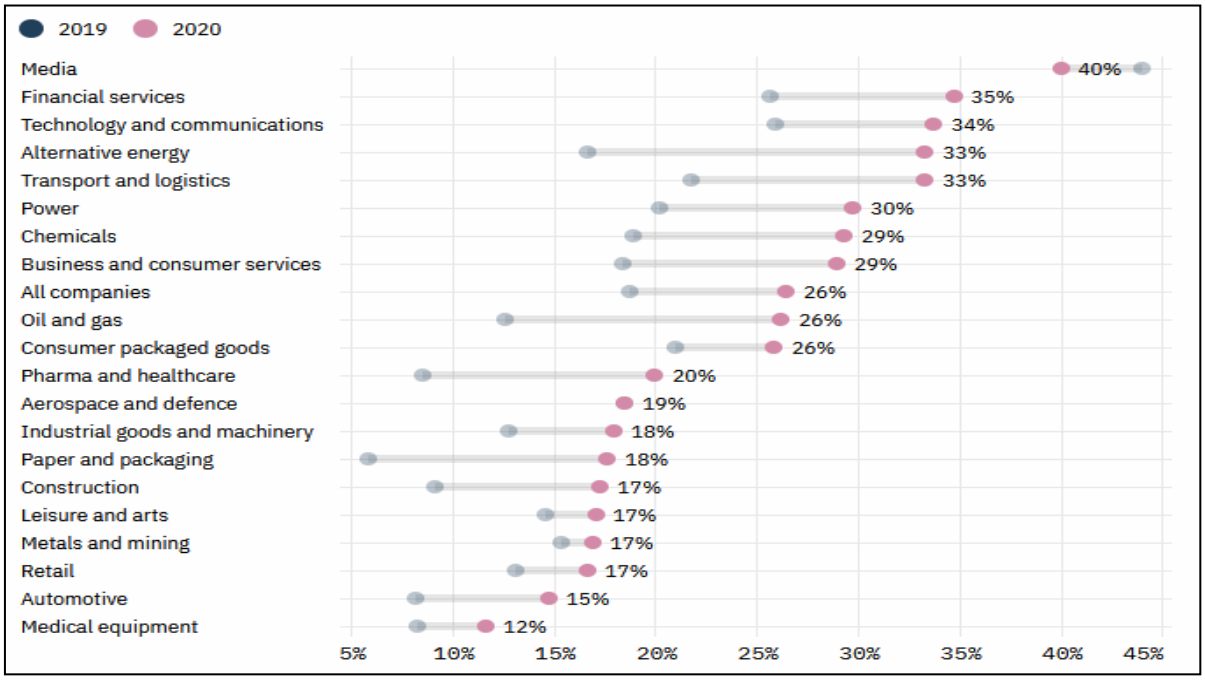


Figure 19: Business transformation due to COVID-19
Sources: (IBM, 2020)

After a year, the results are in businesses that were fast to digitalize reaped the benefits in higher sales, improved share price growth, and higher consumer loyalty, while those that were slow to respond floundered (figure 17 and 18). Now that the economy is recovering in a 'K-shaped' pattern, digital leaders are poised to expand their lead over laggards in the coming years. According to a Tech Monitor (2020) study

of 2,000 global corporations' annual financial reports issued by GlobalData, 26 per cent listed "digital transformation" at least once in 2020, up from 19 per cent in 2019. The media, financial services, and technology industries were the most frequently cited. From 17 per cent in 2019 to 33 per cent last year, the percentage of renewable energy suppliers using digital transformation nearly doubled (figure 20).



Companies digitally transforming or already transformed has tangible advantages. According to Accenture's FTSE Focus Index, the FTSE 350's best-performing companies – those whose share price grew by 34.4 per cent or more in 2019 as per their 2020 annual reports with an average of 21% more than their peers. Companies that often discuss particular innovations, rather than those that make generalized references to digital, come out on top, according to Accenture's study (Borrett, 2021).

Figure 20: Sector-wise digital transformation of companies as per their annual report
Sources: (Tech Monitor, 2020)

It discovered that all mentions of ‘cloud virtualisation' in 2020 annual reports came from the top quartile of the FTSE 350, while four out of five mentions of the word ‘digitalisation' came from the bottom quartile. According to IDC's Global Performance Index, digital companies also benefit from higher sales and profit growth. In 2020, revenue for digital manufacturing companies will be about 20% higher than in 2015, while revenue and income for non-digital manufacturing companies will decline. As a result, digital transformation is becoming an important part of a company's overall strategy: according to Accenture, 83 per cent of business leaders believe their business strategy is now inextricably linked to technology, with 77 per cent reporting that their technology stack is critical to their success. According to Twilio's State of Customer Engagement Survey, this is reflected in increased spending on digital transformation, with an average 46 per cent rise in spending on digital strategy between 2019 and 2020 (Tech Monitor, 2020).

5. Reshaping the perspective of SMEs and startups?

5.1. Impact of COVID-19 on SMEs and Startups

Digitalisation is the use of digital technologies and data to transform an established business model, reshape how work is done, introduce a new dimension to partnerships with customers, vendors, and government agencies, and create new revenue and product opportunities (Li, 2020). Only a few years ago, we could not have predicted the capabilities of emerging technology. Just a few examples include 5G, artificial intelligence, and 3D printing (Dubey et al., 2019). SME digital transformation aids them in lowering operating costs and increasing productivity, which can contribute to improved transparency and easier capital access. Digitalisation also enables the introduction of new products and services to the market, as well as the formalization of SMEs, which opens up new funding opportunities. E-commerce and the sharing economy, as well as data-driven business opportunities through open banking networks, are important drivers of digitalisation for SMEs. (Kane et al., 2021).

A increase in the use of digital technology to reduce face-to-face interaction and protect customers' and employees' health and well-being has become one of the business repercussions of the COVID-19 crisis. Consumer-centric applications like grocery and food delivery systems, cross-enterprise e-commerce applications, and applications like video conferencing, which seem to have pervaded the worlds of customers, companies, and non-profit organizations forever, are among these digitally accessible resources for business activity (Kane et al., 2021). The pandemic has shown a strong correlation between digital preparedness and business resilience since the beginning (Justice and Fersht, 2021). It has greatly accelerated the digital revolution, and SMEs' sustainability now often depends on their ability to rethink consumer relationships, find the requisite digital solutions, and automate business processes (WEF, 2021).

Businesses of all sizes and sectors were affected by the global health crisis, which began in 2020. Despite the fact that certain companies have shown resilience or even discovered new operating niches, the majority of small and medium-sized service businesses have found themselves in “new normal” operating situations. The pandemic's negative implications have been documented in all aspects of life, with economic, political, social, and psychological ramifications. On the other hand, human wellbeing and perceptions of human health have had the biggest impact. In order to postpone COVID-19 transmission from person to person, several countries have halted commercial activities and implemented social distancing. Lockdowns, reduced use, neighbourhood exits, and business closures have all resulted as a result. Businesses of all sizes were affected by the global health crisis, which began in 2020. Many economists see this pandemic as a "black swan" phenomenon, "that is, a surprising, unexpected event of great significance and major consequences that drastically changes

the political and economic climate," which may result in business failures. This is referred to as a global transformation by technology experts, and it can be seen as an opportunity or a threat to change business structures or introduce new technology to help business processes (Ratten, 2020). (Ratten, 2020). Several companies, large, medium, and small, according to Walsh (2020), are “succumbing to the effects of the digital revolution,” regardless of their size.

In 2020, a large number of small and medium-sized businesses (SMEs) and startups are projected to “set a record for so-called mega bankruptcies.” (Maritiz et al., 2020). Furthermore, “things have changed, and the future is uncertain,” as previously said. The high unpredictability of the market climate, combined with its high malleability, necessitates a change strategy, with complete renewal being a viable choice. Since SMEs and startups have been hard hit financially due to their limited capital and skills, new strategy approaches for SMEs / startups can help increase the probability of overcoming the pandemic's effect (Reeves et al., 2020). In a broader sense, "digital recovery" is becoming increasingly important for SMEs and startups. Evidence suggests that it will help both SMEs and governments in better coping with the pandemic's macro and micro effects. Simultaneously, decades-long digital transition roadmaps have been condensed into days and weeks to better reflect the actual situation. Due to how quickly the pandemic changed the economic climate, economic players had to quickly find out how to communicate with their clients – investors, patients, students, companies – or even with their workers, regardless of the field they worked in (Weforum, 2021).

In reality, it happened in the blink of an eye. Companies had to respond with incredible pace and vigour (Sein, 2020). Previous waves of digital transformation, on the other hand, allowed for much more innovation focused on scalable, but meticulously designed pilot projects. However, after months of living in a pandemic, there is a strong awareness that the economic recovery would not be sustainable without a holistic plan that encourages and facilitates SMEs/startups in Eastern Partnership countries to adopt emerging technology more consistently. One of the tactics used to react to disruptive changes in the globalizing market world has long been the digital transformation of business models.

As a result, emerging technologies emerged as a timely and appropriate response to this pandemic's disruptive changes. Of course, the effect of a pandemic is much greater and more drastic than that of typical transformations. Companies are relying more on how to save companies from bankruptcy than on how to create a long-term competitive advantage in the current market. Digital innovations, on the other hand, are no longer considered ancillary; rather, they have become an integral part of a company's business growth strategy (Remane et al., 2021).

Much before COVID-19 became known around the world; one of the extreme powerful factors reshaping the global economy was the digitalisation of companies and their operating models (Marcin, 2017). Information and communication technologies (ICTs) have progressed steadily since the early 2000s, and their increasing connectivity rates have aided the advent of cloud and mobile networks, which are revolutionizing how businesses use computing resources and manipulate data. Digital innovations can improve the productivity and effectiveness of manufacturing processes (Digitalisation in Austria, 2019). COVID-19 merely intensified these already-established patterns. The pandemic has posed a challenge to businesses in a variety of industries. All of these companies have been forced to change their internal operating processes and have been under intense pressure to sell their goods or services across digital channels. Companies have undergone significant transformations and have adopted strategies focused on emerging technology in a short period (Almeida et al., 2020).

These drastic changes are particularly noticeable in those regions that were not adequately prepared for such a rapid digitalisation of daily life due to a variety of factors. Smaller businesses struggled to adapt their business models, goods and services, business strategies and processes to the demands and opportunities of the digital world, even in more prosperous times in the EU (Digitalisation in Austria, 2019). Even though the pandemic has affected every corner of the globe, the economic earthquake unleashed by COVID-19 does not affect everyone in the same way. Since they have "fewer resources to ride out the storm," SMEs, which are vital to the economies of the EaP countries, have been particularly vulnerable to the crisis's implications. (Intracen, 2020). The convergence of emerging technology and the incorporation of physical and digital structures characterize digital transformation. Innovative business models, modern manufacturing technologies and the emergence of knowledge-based goods and services are all on the rise.

To boost consumer, partner, and employee engagement, SMEs must build a customer-centric business strategy to transform internal operations using emerging technologies such as cloud, mobility, social, augmented/virtual reality (AR/VR), Internet of Things (IoT), analytics, and artificial intelligence (AI). To maximize customer response capability, digitization necessitates transforming processes, making the organization more agile, investing in more organic systems, reinforcing standardization, and automating processes. COVID-19 has brought with it tough and unpredictable times while also speeding up the digital transformation process. Equipping SMEs with digital resources is insufficient; appropriate legislative and technical incentives at the national and/or regional levels are needed (Cisco, 2021).

In developing, market-based countries, where government resources to assist small businesses are scarce, the situation is even worse. In order to provide the requisite assistance during a crisis, speed is crucial; as a result, the use of emerging technology is proving critical in assisting SMEs and startups during these unprecedented times. Some barriers restrict digitalisation's full potential to increase SMEs' access to finance, and there are risks associated with using digital financial products to consider. Any of these threats and uncertainties have both direct and indirect impacts on SMEs and startups, thus impacting the broader availability of financial services. Low financial and business literacy, restricted Internet access and use, unreliable (corporate) identity systems, existing regulatory mechanisms, insufficient data protection, and cyber security threats are just a few of them.

The main barrier is the lack of knowledge of digitalisation tools and the possibility of using them in business activities. SMEs and startups representatives, unlike big businesses, do not have the opportunity to hire specialists who would implement and ensure the use of digital tools. SMEs and startups cannot redirect financial and human resources towards digitalisation in most cases. Human rights abuses could become more likely as a result of digitalization. These risks are taken into account in the EU not only in terms of state commitments, but also in terms of corporate responsibility to protect human rights (what policies should be adopted by companies to minimize these risks, what procedures should be applied at the level of companies, even the smallest ones, to prevent violations of human rights), whereas in the EaP countries there is no understanding of the role of the business itself in minimizing such risks; the corporate responsibility to respect human rights is extremely low.

Digitalisation contributes to responsible business conduct. COVID-19 has demonstrated that digital tools can be effectively used to track the behaviour of a business in its supply chain, about its employees and suppliers, to consumers and customers, and to the communities where the business operates. However, digitalisation by itself cannot contribute to an increase in responsible business conduct because of several factors: lack of awareness of state institutions, the academic community, non-governmental organizations and businesses on the developed standards and initiatives on responsible business conduct, in particular on the EU level; inappropriate economic

conditions, in a particularly low level of income affecting individual motivation; risks and challenges associated with the absence of strong democratic traditions, weak civil society, lack of the rule of law, high level of corruption in public and private sectors, and as a result low levels of trust from the people conjoined with an absence of a request for a new social contract; extremely strong ties linking business and state; weak state institutions on effective protection of human rights.

6. The rise of Digital nomads

With dramatic shifts in employers' and workers' working styles/patterns occurring around the world as a result of the COVID-19, the need for a long-term exhibition of potential futures of sustainable employment has never been greater. In the wake of COVID-19, common principles and practices of sustainable work have suddenly shifted toward digitally performed work. We may be witnessing the dawn of a new era of intelligence gathering. Since most of the pre-COVID-19 era, we haven't had a blueprint for this world (Chik & Benson, 2020). In earlier chapters, we looked at the effect of COVID-19 on the global labour market, as well as the impact on global companies, SMEs, and startups. In view of the shortage of informed, forward-looking science, we will explore the potential future of digitalisation with work, and its transformation into almost entirely digital work during the COVID-19 pandemic in this chapter. People all over the world began to experience a "new normal" after the world was placed on lockdown due to the COVID-19 pandemic outbreak. This 'new standard' has made remote work acceptable, resulting in widespread use of virtual communication, networking, and remote work technologies. Although the COVID-19 pandemic restricted mobility by closing borders, grounding flights, and limiting regular commutes, dreams of a "remote-life" future emerged. Professionals (and employers) all over the world should start to imagine a future in which they work remotely from 'exotic' locations with lower living costs rather than working from their own home. Firms worldwide have expanded their COVID-enforced remote-working strategies to 2021 and beyond, and a wider transition to remote and/or hybrid workforce models as a way to reduce overhead costs while optimizing employee efficiency and health is emerging. This pandemic has hastened the normalization of the digital nomad phenomenon, which Makimoto and Manners (1997) predicted over 20 years ago. (Makimoto & Manners, 1997).

6.1. Digital Nomads.

Tsugio Makimoto and David Manners (1997) imagined a globalized world where evolving technology, new work system types, and an increasing focus on entrepreneurial activities would fundamentally change our lives, blurring the lines between work, leisure, home, and travel when they published their future-looking manifesto Digital Nomads in 1997. They said that businesses will have to adapt in order to remain competitive in the (virtual) global marketplace, forcing people to choose between settled and nomadic lifestyles (Makimoto & Manners, 1997). For many people, their vision of a world free of everyday commutes to and from office cubicles has become a reality more than two decades later. whether willingly or involuntarily (Thompson, 2019).

Because of the widespread availability of digital technologies and technical advances, location-independent employees, nicknamed "digital nomads," can work virtually anywhere, at any time (Blatt and Gallagher 2013). Desires for (personal) independence, adventure, and a break from the traditional workplace are frequently connected to the desire to be "location independent" (Sutherland & Jarrahi 2017). While nomadic workers typically travel for work, digital nomads travel while working, which means that, in addition to international travels for work, digital nomads often must adapt to any

spaces they come across when they choose to visit a certain country or location (Nash et al. 2018).

As a result, rather than being attracted by work opportunities, people move between places because they want to live the "easy life" (Müller 2016). Though it is hard to estimate the exact number of people working as digital nomads (especially in the current context of the COVID-19 pandemic), a study published by MBO in 2018 shows that this lifestyle pattern is on the rise: rough estimates placed the number of digital nomads in the US at 4.8 million (MBO 2018). However, as the number of long-term remote workers increases around the world, the number of digital nomads will increase as well. A Google search for “digital nomads” in September 2020 yielded around 5,700,000 generic results (compared to 1,300,000 in September 2019).

The search resulted in a glimpse of a number of news articles and prominent press, journals, forum posts, as well as social media posts, most of which seem to enlighten that working remotely while traveling around the world is something that everyone can do in order to pursue of a better or different lifestyle. The so-called digital nomads, according to Bauman (2006), Sutherland, and Jarrahi (2017), are a sign of today's liquid society, in which people are constantly on the go. It tends to be the result of a combination of many wider systemic forces, such as globalization, technological advancements, and changing job and social structures, that makes the lifestyle so appropriate and appealing to many people.

These changes might be challenging for many people worldwide as jobs become increasingly precarious, insecure, flexible and sometimes even low-paid. Nevertheless, numerous digital nomads seem to embrace this modern labour climate, often in search for more autonomy, flexibility, as well as excitement outside of work profit (Altringer 2015). However, digital nomadism does not necessarily pose a threat or disrupt social norms or structures, or daily practices typically included in contemporary life. Digital nomads rather adapt to capitalist changes by re-constructing their lifestyle, using their technical and entrepreneurial skills, as well as by frequently changing jobs and their physical job location.

Because of the emergence of information and communication technology, digital nomads now have more professional flexibility and adaptability (ICTs). Digital nomads constantly shape their personal and professional lives to sustain their ideal lifestyle, mixing profession, leisure, and personal travel (Makimoto & Manners 1997; Urry 2007). Digital nomads have historically worked as freelancers or self-employed internet entrepreneurs in the tech industry, but they have lately gained popularity in a number of other roles and industries, including language instructor, web designer or app developer, just to name a few. Nevertheless, for numerous digital nomads, the need to travel nationally or internationally has driven their decision to live a nomadic lifestyle, leaving

out considerations about whether they would produce enough income, independently from location. Alongside the rise of digital nomads searching for a location-independent lifestyle, the need for respective support services has increased. Co-living and co-working spaces, mentor programs, agencies, as well as domain-specific assistance (legal, technical) are all available to assist digital nomads in establishing themselves in their new mobile lifestyle. A flourishing industry of digital nomads financing themselves by teaching other digital nomads how to do the same has sprung up alongside these secondary agents. By turning their mobile lifestyle strategy and practical expertise into a revenue-generating machine aimed at other individuals looking for the same lifestyle, they have turned their lifestyle strategy and practical expertise into a revenue-generating machine. (Mancinelli, 2018).

Another important characteristic is semi-permanent or continuous international travel. Although the length of time spent traveling vastly depends on lifestyle preferences, visa requirements, and other elements, the international aspect of such journeys has been described as a critical component (Reichenberger 2018; Thompson 2018, 2019). These two apparent features are compelling in distinguishing digital nomadism from other related or similar phenomena that is discussed at a later stage in this paper. Digital nomads actively choose to be mobile and engage in international as well as currently virtual travel in order to work remotely in a variety of social and online settings. Current research on digital nomads has used data involving co-working space users (Orel 2019) as well as self-employed workers (Thompson 2018) to scale the phenomenon. The phenomenon's size makes it difficult to quantify, as digital nomadism encompasses a wide range of employee groups and styles, including both conventional and independent jobs but the phenomena are common. The relationships between digital nomadism with associated terms are shown in figure 21.

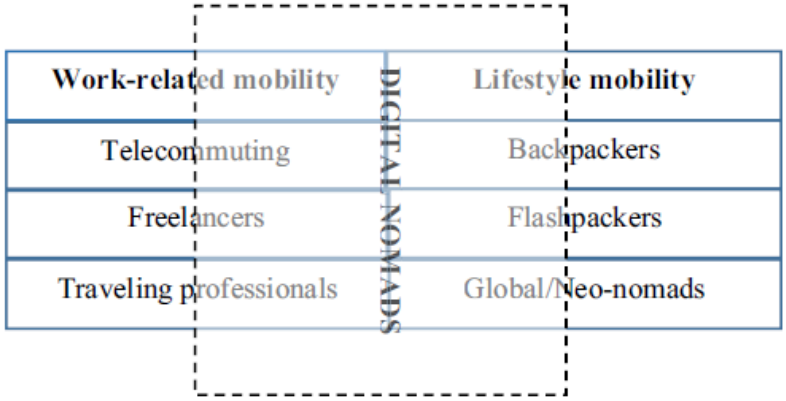


Figure 21: Relationships between digital nomadism and associated phenomena
Sources: (Olga, 2020)

6.2. Digital Nomads during COVID-19.

Although the coronavirus disease has undoubtedly disrupted work routines around the world, there is a paucity of empirical evidence on the extent and scope of these disruptions, and further research into the behavioural, social, and organizational dimensions of COVID-19's effect on digital nomadism's lifestyle and digital work practices is needed. Organizations have rapidly embraced widespread remote working as the standard. According to the Capgemini Research Institute's (2020) executives report which is based on interviews of academics and executives from around the world and a survey of 500 companies with 5,000 employees. This report discovered that remote working is the new normal: 75 per cent of companies expect at least 30 per cent of their workers to work from home, and more than 30 per cent expect 70 per cent of their staff to work from home. Organizations are discovering that remote work increased efficiency and cost savings by up to 24 per cent in Q3 2020 as they transition. However, though approximately 70% of companies expect these benefits to last beyond the pandemic, owing to cost savings in real estate, facilities management, and business travel, workers are concerned about the long-term implications as burnout sets in. In reality, half of the new hires we spoke with said that if remote working was their only choice, they would leave. The transition to a hybrid workforce model is unavoidable, but you can't simply hand your employee a laptop and a bonus to go buy a better chair. Employees' evolving desires and attitudes must be the priority of organizations. Only by improving the way they handle and lead, by reshaping employee expectations, would they be able to do this.

Employees' evolving desires and attitudes must be the priority of organizations. Only through transforming how they organize and lead, reframing employee touch points, and rebooting the function of the physical workplace would they be able to build a genuinely hybrid model and reap the benefits of increased efficiency, reduced costs, refreshed managerial positions, and stronger cultural fabric. Even though artificial intelligence is increasingly dictating how we function, the new normal would be nothing without a human component. Technology firms are becoming more proactive in encouraging their workers to operate from home permanently. For example, Twitter was the first company to allow workers to work from home permanently. Similarly, Microsoft permitted its workers to work from home for up to 50% of the week with no restrictions, or to shift to a permanent remote position with management approval. Similar proposals have been announced by companies in conventional industries (Capgemini Research Institute, 2021). The following are a few examples:

- Siemens AG, a German engineering services firm, has unveiled a new mobile working model that will enable workers around the world to work two to three days per week from a remote location.

- Long after the COVID-19 pandemic has passed, the bulk of workers at Capital One Financial's US call centres for cards will be able to operate remotely.

- Groupe PSA, a French automaker, has announced that its office-based employees will continue to operate remotely long after the pandemic has ended.

Furthermore, according to the World Economic Forum's Future of Jobs Report (2020), 84% of businesses have increased the digitization of work processes. With increased digitalization and a rapid transition to a hybrid working model, the issue of stable and enhanced digital access to business processes becomes crucial. Organizations must adapt rapidly in a variety of ways, including offering safe database access, virtual communication tools, and internal portals and information hubs. Cyber security is one of the big issues that companies must address in this regard. Leaders in cyber security are worried about the ease at which data may be exposed by workers working remotely during the pandemic. It's critical to provide workers with the right resources, technology, and data infrastructure to transition to a hybrid operating model.

According to a survey conducted by the Capgemini Research Institute (2020), 81 per cent of executives said they have provided employees with access to resources, data, and insights from anywhere. According to a previous study, 54 per cent of executives consider developing digital skills – such as artificial intelligence, data analytics, and digital marketing – to be a top priority. Person remote working efficiency can be increased with a greater understanding of emerging technology. Organizations may use digital technologies to track employee satisfaction and tailor their delivery of a re-

mote working setup based on employee needs. Companies may foresee the establishment of novel work arrangements, with a focus on social distance and specifically the use of IT-based tools to work remotely, given the likelihood of a resurgence of infections despite the ongoing vaccination plan. The effects of the COVID-19 pandemic have been recorded in almost every field of human awareness in recent years. The effects of SARS-CoV-2 have been recorded in a variety of settings, including “forced” home office work arrangements, team collaboration, and online education and skill development among others (Wang et al., 2020; Cox, 2020).

According to Borrett (2020), following the COVID-19 pandemic, which has rewritten the laws regulating employment, workers have opted to leave the workplace permanently in favour of remote jobs. Although many people are leaving cities in search of more affordable and spacious housing, a small but growing number are choosing to become "digital nomads," or remote workers who travel the world. Employers see digital nomads as a potentially open source of digital knowledge, and politicians are beginning to make it easier for them to work in their countries. Interest in the lifestyle has been steadily growing since 2014, according to a spike in Google searches for the term "digital nomad lifestyle." According to an MBO partners study (2018), despite travel constraints, the number of digital nomads in the United States increased by nearly half to 11 million in 2020, as a mass migration from the workplace in 2020 demonstrated just how many jobs can be performed remotely. While digital nomads are frequently thought of as freelancers, the MBO report predicts that by 2020, full-time workers will make up the majority of digital nomads.

6.3. Role of digital nomads for the future labour market.

The Digital Nomadism phenomenon has spread rapidly throughout the world, especially in regards to nomadic workers' unique work practices and lifestyles, as well as their constant quest for a balance between leisure, personal life, and work freedom. Digital Nomadism, considering their many similarities, is positioned differently in the labour market than in other digital economy jobs. Their nomadic activity leads them to use the same information technology (IT) platforms as remote workers and other nomadic jobs, but what sets them apart is the duration of stay in the chosen places, which is linked to their decision not to have a fixed address (Ens et al., 2018). Following the same logic as above, digital nomads demonstrate entrepreneurial activity as well as extensive use of personal information management practices, making them less susceptible to commoditization and the resulting work instability that is characteristic of freelancing (Hermann & Paris, 2020).

Concerning the ‘future of work’, a broad topic that has come to the fore in recent years regarding the shock of the COVID-19 outbreak on the digital transformation of work, many academics see digital nomadism as a good case study for capturing trends and forecasting future work practices and new ways of working. For instance, Hemsley

and colleagues (2020) found a co-occurrence relationship among Twitter hashtags related to the experiences of digital nomads, the sense of dislocation, mobility and flexibility linked to the physical location in which the work of Digital nomadism takes place (i.e., co-working spaces), and the different ways in which that kind of work may change in the future. In this line of thought, there is a lack of thoughtfulness of how the lifestyle of digital nomadism will impact the future of work and how to design the appropriate technology support taking into account the resulting requirements of such dynamic endeavours (Nash et al., 2018).

Extrapolating to the economic context, more specifically in the case of gig/shared economy, some works have argued that digital work has transformed the factors of production to create digital goods and thus challenge the traditional economy and labour market. They also claim that digital nomadism regularly deals with novel technologies that are difficult to regulate, their finances leave no trace for governments, and they consume and produce services in what some economists usually call ‘grey-market.

As pointed out by Wang et al., (2019), digital nomads are transforming the market economy through a new set of resistance practices against its established norms and regulations such as local taxation, border control, or fixed regimented routines. As a result, several developments have emerged regarding the active involvement of digital nomads in the consumer economy using self-driven work practices and collective creative consumption leveraged by interpersonal networking activities and collaboration mediated by digital environments with no need for physical assets. However, it is in the cultural sense that the identity of digital nomads emerges with greater intensity (Müller, 2016).

In general terms, the essence of digital nomads is in their ability to harmonize the paradoxes created by exercising their will to preserve an autonomous way of life through a nomadic experience-driven mainly and primarily by the enjoyment while working and living as location-free professionals. This inevitably contributes to the conception of work as an integral part of their leisure activities, mediating the dichotomies between leisure and work, privilege and deprivation within the context of work-life balance that characterizes the digital nomadism phenomenon (Reichenberger, 2018).

6.4. Types of demand in the labour market due to digital nomads.

Digital nomads are defined as individuals who choose a lifestyle that is technology-based and does not depend on a fixed location, enabling them to work and travel remotely from anywhere. Digital nomads, like autonomous workers, defy categorization by combining work from home with travel for a number of reasons and lengths of time. They are diverse in age and gender, with approximately one-third of them being female, despite the fact that they tend to be younger and male. The majority of them are self-employed (freelancers, independent contractors, self-employed, and so on), but some have traditional jobs. Some digital nomads travel for months at a time, crossing countries and continents on a regular basis. Others travel for shorter periods of time, taking "job cautions" and working sabbaticals that can last anywhere from a few weeks to several months. Many people also never cross a border, preferring to live and work in a single location or region. Digital nomads are a group of people who are united by a desire to explore and try new things. They have the freedom to operate from wherever they can get an Internet connection (MBO Partners, 2021). Digital nomads use the Internet and a variety of digital, cloud-based telework services to complete their tasks. These include online video and chat channels for communicating with customers and partners, content creation tools and cloud storage for creating and delivering products, and logistical support for manufacturing and delivering goods.

The so-called technologically enhanced "gig economy" is portrayed in the mainstream press and business and economic literature as a win-win situation for both employers and employees, providing both freedom and flexibility. Workers can work from home and set their hours, and employers don't have to pay for overhead or benefits. Employees who are members of a website or phone-based service that allows them to bid on work will get Gigs, which are one-time jobs. After the job is completed, the employing client will score the production, which will be added to the overall ranking of the worker, that could potentially impact their bottom line. This enables freelancers to work for less than the market cost, or in some cases even for free, to increase their professional profile by gaining more gigs – and feedback. Due to the fact that piecemeal work does not automatically come along with benefits, freelancers are obliged to cover their pensions, as well as health care and operating expenses from this income. Professor Juliet Schor of Boston College is one of the prominent sociologists who is researching the impact that the gig economy has on jobs. According to a Pew survey cited by Schor and Attwood-Charles, “gig workers overwhelmingly receive less than $30,000 annually, however, because many are in school, part-timers, or not in the labour force; this is not surprising” (2017). The workforce is also split between the workers who work full-time and who do side gigs simultaneously, and those who are not working full-time and rely on their side hustle to make ends meet. According to the same Pew survey, 29% of people depend on this specific income in order to cover their basic needs, while 42% see gig work as a viable alternative source of income (Schor and Attwood-Charles, 2017). Technology has helped to de-stigmatize gig work across platform applications because of their relationship with highly educated and cultural capital individuals.

Furthermore, Schor and Fitzmaurice (2015) discovered, while researching on four sharing-economy societies, that participants were highly educated, with over 50% holding graduate degrees, as did around half of their parents, and members were preferring to share instead of acting out of duty. The majority of digital nomads' accommodations are booked via the Airbnb.com website, which is based on the sharing economy. In addition, a small percentage of nomads augment their income by renting their properties on Airbnb.com and hiring a property manager. (Schor and Attwood-Carles, 2017). According to Schor (2017), wealthy middle-class participants with relatively expensive lodgings to rent out would receive substantial amounts of money on platforms like Airbnb – some were able to earn $30,000 on top of their full-time salaries (up to four times what would be earned usually on a long-term rental). Discrimination against those who were less wealthy, such as those who did not own high-value properties like luxury condos in desirable cities, was rampant, and racism was apparent among Airbnb and Uber users.

According to the study by Nash et al. (2018), the compound problems of mobility and professional versatility exacerbate digital nomadicity, which is a hybrid of the four principles mentioned above (Figure 22). Digital nomads have a lot in common with other non-traditional job settings, such as remote or nomadic jobs. As an emerging class of digital workers, digital nomads, on the other hand, exhibit characteristics that distinguish them from these categories and descriptors. Although people who fall into one of the four labels share characteristics with digital nomads, people who fall into one of the four labels are not inherently digital nomads. Some groups and occupations, such as (a) Amazon Tuckers (gig workers), (b) stationary corporate IT aid (internet workers), (c) tourists (global travellers), and (d) itinerant salespeople, suit each mark but aren't necessarily digital nomads (nomadic workers). By borrowing the basic aspects of these different brands, we can gain some insight into the nuances of digital nomadicity and the supporting roles of technology in their work-life.

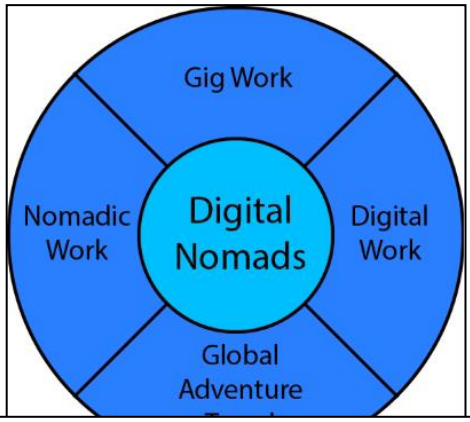


Figure 22: Digital Nomads: Confluence of four concepts
Sources: (Nash et al., 2018)

In the work practices and lives of digital nomads, the diminishing roles of organisations and the fixed notion of the workplace are mirrored. Individual digital workers are gradually behaving as "free agents" (Barley et al., 2017), with the right to work

where and when they like. The proliferation of pervasive personal devices and services is related to changing job norms (e.g., new generations of workers have looser ties to companies and want benefits like "flex-working"). The results also indicate that a holistic view of digital nomads and their digitally mediated work practices requires a more nuanced interpretation of core elements of their work, such as gig work and digital work. As a distinct subcategory of information work, digital work is still in its infancy. (Durward et al., 2016).

As shown by digital nomads, the nature of digital work lends itself to virtualization, freeing employees from physical work environments and enabling location-independent work. There is a lack of conceptual clarity regarding online freelancing, which is the type of gig work that digital nomads participate in, and research on gig work is still in its early stages. The majority of recent research has focused on microtasking through platforms such as Amazon Mechanical Turk or more idealized types of gig work, such as those found in ride-sharing apps. By reflecting on the job situation of digital nomads and the crucial roles played by digital technology, Nash et al. (2018) contribute to the ongoing debate about digitally mediated work and the future of work. In answer to our second research question about the position of digital technologies, we can see that various digital technologies play a significant supporting role in all four categories.

As a result, these advancements touch every aspect of the digital nomad's professional life, from marketing and consumer acquisition to working and interacting with clients. For example, cloud systems allow them access to information from several locations, algorithms on websites like Upwork match them with potential clients, and when their work and personal lives collide, their computers can be able to assist them in finishing work and becoming productive. Orlikowski and Scott (2016) observed that “specific materializations of work today include digital networks driven by complex algorithms and continuous streams of data.” These technologies enable employees to work in a mobile and flexible environment, but they also require a high level of expertise on their part. Digital nomads are typically well-versed in information technology and services, as well as trust in configuring or even developing them to solve their problems. These revelations are not only intimate, but they are often generated and shared across community network (Nash, Jarrahi and Sutherland, 2018).

Digital nomadicity has grown in popularity as a result of the widespread availability of personal digital technology and ubiquitous information infrastructures around the world, as well as changing job norms. Beyond the hyperbole, it's now critical to explore the characteristics of this digital worker community, as it exemplifies issues of nomadicity and job versatility that will soon pervade the workplace. As a result, the digital nomad community provides a valuable framework for researching the role of digital technology and information tools in the work practices of the new generation of employees. According to Vincej (2020), “social media manager, e-commerce company, video production or video editing, affiliate marketing, teaching languages, translations, illustrating and graphics design, programming, voice acting (voice over, voice advertising, video productions), website development, blogging, and voice acting (voice over, voice ads, video productions), Tour Guide, Transcribing and Customer Service Representative” are popular digital nomad jobs. Furthermore, Kubickova (2021), categorise popular digital nomad jobs into six popular heads as shown in figure 23.

Tech	Teaching	Consultancy
Programmer	Online teacher/ tutor	Project manager
Website developer	Webinar producer	Strategic consultant
App developer	Lifestyle coach	Business development
Marketing	**Creative**	**Other skills**
SEO specialist	Creative writer	Virtual assistant
Content marketer	Video creator and editor	Translator/ Interpreter
Blogger	UX/UI designer	Technical support
Social media manager	Web designer	Customer Support
Affiliate marketer	Photographer	Accountant

Figure 23: Popular Digital Nomadic Jobs
Sources: (Kubickova, 2021)

In this chapter, we saw it as an exploratory engagement with digital nomad culture, and several factors could help future research on the subject. Due to a lack of

knowledge about digital nomads, our study was minimal, but a more formalized survey of the group might provide useful insights into the people and careers depicted there. Furthermore, improved conceptualizations of underlying concepts such as gig work and digital work will aid in the study of digital nomadic activities. Because of the independence represented by the image of a beach-based laptop worker for an audience made out of workers still working in work spaces and their employers still paying for these spaces, the "digital nomads" concept has piqued the interest of the business and corporate press. Based on their book Digital Nomad, Makimoto and Manners (1997) were the first to coin the word, and their prophecy came true in the form of a lifestyle trend – though much smaller than the subculture referred to. Speakers at conferences dedicated to digital nomads advocate that everyone can and should be a digital nomad.

7. The emergence of new working models

The global economy and labour markets have been devastated by the coronavirus (COVID-19) pandemic. Significant parts of the global economy came to a halt at the start of the pandemic, and economies are now in a deep recession. Global GDP is forecast to decline by 4.5 percent this year, the biggest drop in recent memory. Growth will pick up to 5% in 2021, but output will remain well below expectations before the pandemic, and for most economies, well below what was achieved at the end of 2019. Such dramatic decreases in economic activity have the potential to transform the health crisis into a significant job loss. According to one forecast, unemployment in OECD countries will nearly double this year, from 5.5% to 10%, and stay at 9% by the end of 2021. 2020 (OECD (b)). In a wider view of the global labour market, the International Labour Organization (ILO) forecasts a 14% fall in working hours for the second quarter of the year 2020 compared to the previous quarter. This is represented by the loss of 400 million full-time jobs (ILO, 2020). Based on OECD growth projections from June, the ILO expects this massive reduction of working hours to be reduced to 34 million full-time workers by the end of the year (OECD (b), 2020). In addition to health-related issues, the pandemic poses two major obstacles from a social-economic standpoint.

- The immediate consequences of the pandemic are the first problem. This includes policies to mitigate the immediate negative effect of pandemic mitigation measures (lockdowns, social distancing, and so on) on jobs and economic activity, preventing the initial negative shock from escalating and leading to a much deeper and longer downturn.

- A second issue is that the pandemic is exposing and exacerbating existing flaws in our economies and societies, especially persistent and high inequality and a lack of decent employment (OECD (b), 2020).

Many people at the bottom of the income scale, as well as those in insecure or unstable employment, have been hit the hardest by the pandemic in terms of health and income (OECD, 2020). As a result, the challenge is not only to recover from the work losses caused by the COVID-19 crises, but also to prevent people from being permanently unemployed. The challenge is to do so in a way that results in better jobs and more inclusive labour markets. As a result of the COVID-19 crises, millions of people were laid off around the world. However, not all sectors were affected: demand for healthcare increased, as did the demand for schools in some parts of the world and online shopping. Men, under normal circumstances, move between different sectors regularly, but at a slow rate.

Furthermore, in the doom and gloom of the beginnings of the COVID-19 pandemic, something unexpectedly positive began: companies started to collaborate freely on an unprecedented scale, prioritizing the potential to generate value over the

need to make a profit. For example, Anyone who requires assistance with medical device design may use Siemens' Additive Manufacturing Network. Scania, a Swedish truck maker, has teamed up with Karolinska University Hospital to create mobile testing stations using trailers. Scania has also appointed 20 logistics and buying experts so that these were able to locate, order, and finally deliver personal protective equipment. These are only a couple of examples. Despite the fact that it is often overlooked in normal situations, such teamwork will save lives and have major business benefits. For over a decade, they have been researching open innovation as well as how to innovate in a more distributed environment. This type of distributed, decentralized, and participatory approach to innovation is still a pipe dream for many businesses.

The latest surge in open innovation, on the other hand, reminds us of open innovation's enormous potential, regardless of whether or not one is in a crisis situation. Open innovation has the ability to enhance and optimize value creation: It opens up a plethora of new opportunities for value creation, such as finding new partners that have complementary skills or to simply unlock latent and potentially successful long-term relationships. Open innovation has the potential to help companies finding new ways of addressing pressing issues while still establishing a positive identity in a crisis. Most importantly, it can act as a basis for potential cooperation, as sociological research shows that confidence grows when partners go out of their way to help each other. Most significantly, it can serve as a basis for potential cooperation, as sociological research shows that confidence grows when partners willingly go the extra mile for each other, offering unexpected favours (Dahlander & Wallin, 2020).

7.1. Open Innovation.

Henry Chesbrough, associate professor and director of the University of California's Haas Business School's Open Innovation Centre, coined the word Open Innovation. It is an innovation management model that encourages cooperation with individuals and organizations outside of the company. In this way, open innovation issues represent a genuine cultural shift away from the organization silo mindset and the secrecy that has long been synonymous with corporate R&D. When a company recognizes that there are many bright professionals with more experience outside the organization, this innovation model becomes feasible. The possibility of attracting certain external individuals and/or companies becomes more real at this stage. Companies use a variety of methods to incorporate open innovation activities, such as forming strategic partnerships, conducting research, and so on (Ennomotive, 2021).

Although there are legitimate concerns about Intellectual Property (IP), return on investment, and other unintended effects of open innovation, what can be seen now are several opportunities for innovation during this crisis and even beyond. We've wit-

nessed numerous lessons that can help businesses taking advantage of open innovation while this pandemic is ongoing, and also accept it once it's over (Dahlander & Wallin, 2020). The following are well-known open innovation challenges and concerns:

- **For the time being, disregard the IP laws**. Many companies are concerned about "value leakage" as a result of external partnerships. Therefore, they prefer to “stick to their knitting” and focus on a few minor activities rather than the most pressing market concerns. Many chemical companies in Europe and the United States, for example, have made it extremely difficult for their open innovation partners to support and advise them. They wouldn't reveal what their top concerns were because doing so could jeopardize future patenting opportunities. Instead, the tech collaborations have faded into obscurity. These IP issues are legitimate and relevant, but they run the risk of stifling existing open innovation initiatives. However, in the current context of the COVID-19 crisis, it might be more prudent to put the focus on generating rather than collecting value. Without risking bad attention, smart companies take a gamble by collaborating on vital ventures. One example for this is Scania, a heavy truck manufacturer popular and well-known for its manufacturing system. In case Scania sends some of its best experts to a Getting, a location in Stockholm, to boost ventilator production, it does not risk any of its core technological assets. However, it may speed up and the virus’s eradication, by contributing to the development of relevant medical capacity (Dyck, 2021).

- **Use two-sided inspiration to your advantage**. If the initial excitement for open innovation has died down, businesses also recognize that they need to rely on the voluntary involvement of workers and stakeholders, as conventional control and command methods seem to be ineffective. To inspire internal and external partners, businesses must use a mix of hard and soft rewards. Companies must determine and react to the true motivation of their partners. Their research conducted on open-source software development, for example, has shown a broad variety of motivations among developers. Some are encouraged to share their code due to labour market signals, while others are guided by ethical concerns. They also are adamantly opposed to any attempt to build software that cannot be freely reviewed, modified, or shared. (Dahlander & Wallin, 2020).

- **Accept new partners with open arms**. Taking on new partners is a popular challenge in open innovation. Finding, validating, and complying with new partners can be costly, and it can also lead to the creation of new social relationships among individuals. It is also known that when it comes serious issues like COVID-19, new partners with complementary skills and perspectives

are urgently needed. The COVID-19 crisis may have eased these problems in at least two different ways (Kylliäinen, 2021).

- **Transformation occurs when there is a sense of urgency**. In "standard times," the first steps toward open innovation are reasonably straightforward. Hire some consultants, organize an invention competition, and wait for ideas to come in. However, the outcomes are always disappointing. Companies must consider the transformational challenge ahead in order to completely reap the benefits of open innovation. These types of initiatives are usually just the tip of the iceberg, and effective open innovation frequently necessitates organizational and institutional changes in terms of how companies are operated. Transformations of this magnitude are difficult to achieve for a single individual, a team, or a business unit. During a crisis, the executive attention that is needed comes out of nowhere. Smart companies use this window of opportunity to effectively re-shape their innovation infrastructure. Higher education, a historically conservative sector, will possibly serve as a model for how open innovation can be applied on a broad scale — and how it can grow. We were all told that the next day's classes would have to be replaced by immersive alternatives. In the end, much was left to the discretion of the different teachers, but university presidents ended up sending messages encouraging innovation and eliminating bureaucratic barriers. (Dahlander & Wallin, 2020; Leminen and Westerlund, 2021).

Positive indicators include open innovation and cooperation between different stockholders. It may be concluded that the global response to the new coronavirus has shown that shared knowledge of a common enemy unlocks the speed, capabilities and power that is needed to solve the most challenging problems. In addition, another important aspect is to consider what needs to be delivered after the crisis. This is a vital reflection for society. After searching or doing or establishing new ways of doing open innovation during this crisis, the organisations gained more innovation, much-needed stability and, in the end, ensure its sustainability which further leads to profitability. For example, allowing and promoting employees to establish or work from hybrid workplace(s). This is now became a new normal, let’s discuss hybrid workplace.

7.2. Hybrid Workplace.

The COVID-19 has changed dramatically our social, personal and professional life. It has created difficulties in the workplace, forcing organisations to adopt work-from-home (WFH) policies. Although organisations continue to struggle to become fully operational, the idea of a "hybrid workplace" has provided a ray of hope for dealing with the crisis. New ideas arose as a result of creativity and exploration, allowing the situation to be sustained as much as possible. In terms of cost-cutting, revenue creation, employee satisfaction, and many other factors, a hybrid workplace has many advantages for an organisation. It all depends on how well management implements it in

order to ensure long-term viability and performance when operating remotely. A hybrid workplace is a place in which workers come to office only on occasion and complete the majority of their work from home at their leisure. Organizations are adopting a relatively new concept to introduce a simpler workflow when dealing with the pandemic. The concept of building a blended workplace is the future of how businesses can operate in the long run. It is here to stay, and businesses must adapt and cope with the change while preserving efficiency and increasing employee engagement (Rabha, 2021). A hybrid workplace provides a number of advantages some are highlighted below:

- **Bringing Down Operating Costs**. Organizations now incorporate remote working instead of carrying out regular activities in the office. As a result, running expenses are reduced, and organisations are relieved of the need to invest in physical office space. Workers occasionally work on-site, but organizations have the ability to work remotely with a hybrid workplace. As a result, additional commuting expenses are reduced, and a significant amount of money is saved (Teed, 2020).

- **Productivity Improvements**. Employees become more responsible and accountable in a blended workplace. Employees feel more independent and optimistic in completing their assignments because they are less likely to be micromanaged. They try their hardest and become more conscious of their obligations, resulting in sincerity, discipline, and accountability. It has a huge impact on efficiency and interaction (DelBene, 2021).

- **Distributed Teams are now possible**. By transforming the organisation into a hybrid workplace, remote workers can continue to function without interruption. It enables them to cooperate with other teams to increase productivity while maintaining the quality of the work. Furthermore, by combining remote and on-site work, versatility becomes a viable choice, improving overall efficiency. When working with dispersed teams, communication can be disrupted. Such flaws, on the other hand, can be easily remedied with the correct measurements and equipment (Rabha, 2021).

The hybrid workplace model is not without flaws. Not everyone has access to high-speed internet, dedicated home workspaces, or distraction-free environments. Remote or hybrid employment is clearly not a choice for frontline employees, such as those working in hospitals, factories, or law enforcement. Employees who are unable to function in the workplace can also be at a disadvantage in a hybrid setting. Remember the case of an employee who is unable to attend a face-to-face conference. Even if they enter via camera, they can miss out on some of the side conversations. Female workers, in particular, could be at a disadvantage because they are disproportionately forced to care for small children, preventing them from returning to the workplace

(Teed, 2020). There is also fear that workers who are seen in the workplace would be perceived as producing more. Since they are less noticeable than those who return to the workplace, remote workers may feel overlooked for opportunities. This may be particularly troublesome if the office's leadership is present. To put it another way, the physical office does not have more authority than a remote office. The difficulties of teamwork and communication are also important. With two distinct backgrounds to negotiate, there's a greater chance that one party will feel left out of important discussions (Lloyd, 2020). In the midst of the COVID-19 crisis's, organisations are focusing and following open innovations and adopting hybrid workspace model which resulted in emerging of new working trends, these are discussed in the following sub-chapter.

7.3. Emerging working trends.

According to a Gartner (2020) survey of 800-plus HR professionals globally, nine new working patterns emerge as a long-term consequence of workforce and workplace changes caused by the coronavirus pandemic disruption. It is now up to those leaders to analyze the impact of every single HR trend on their respective organization's operational and strategic objectives, decide which trends require immediate action, as well as assess in which way these respective trends influence strategic goals and plans from periods prior to the pandemic (Baker, 2021). Their new trends are as under:-

- **Increase in remote work**. According to a Gartner study, after COVID-19, 48% of staff are likely going to operate remotely at least on a partly basis, compared to 30% before the pandemic. Examine the skills employees will need to collaborate digitally as businesses move to more remote work environments, and be ready to adapt employee experience strategies. It seems also relevant to consider if and how exactly goal-setting and employee feedback can be done remotely.

- **Data collection widened**. According to the Gartner report (2020), 16% of employers are increasingly relying on technology to handle their employees, such as “virtual clocking in and out, tracking work machine use, and monitoring employee emails or internal communications/chat”. Although some of these companies focus on productivity, others tend to focus on employee engagement as well as well-being in order to achieve a better understanding of their employees. Even prior to the pandemic, companies were gradually using non-traditional employee tracking techniques. However, this trend is likely to be accelerated by new remote worker monitoring and by data collection on the safety and health of employees. Respect best practices to ensure that employee data and analytics are used responsibly.

- **Extension of contingent workers**. Many people have lost their jobs as a result of the pandemic's economic instability, and some have been exposed to nonstandard work models for the first time. Many companies cut their contractor budgets in response to the pandemic's economic effects, although this has since changed. According to the Gartner survey (2020), companies will continue to use contingent workers after COVID-19 to maintain workforce stability, and they are likely going to consider introducing other types of job models that were used during the pandemic, for instance talent sharing and 80% compensation for 80% jobs.

- **Employer's position as a social safety net is being expanded**. Employers are increasingly taking an active role and participation in their employees' financial, physical, and mental well-being as a result of the pandemic. Upgraded sick leave, financial aid, modified working hours, as well as child care arrangements are all examples of support. Some groups aided the nation by changing operations to produce products or provide services to aid in the fight against the pandemic, as well as providing free community services and community relief funds. In addition, the ongoing economic downturn has driven employers' perceptions of employee experience to new heights. Personal considerations, external factors excluded, take priority over what really matters to both companies and workers. Applying these kinds of measures may be an efficient way to enhance the physical and mental well-being of employees.

- **Essential skills and tasks are separated**. Before COVID-19, critical positions were thought to be those that required critical skills or the capabilities that a company required to achieve its strategic objectives. Employers are also recognizing that there is a second group of key roles: those that are critical to the success of critical workflows. It is important to focus less on positions — which include unrelated skills — and to put more focus on skills required to boost the organization's competitive edge and workflows fueling the advantage of creating the workforce that will be needed post-pandemic. Instead of planning for a particular next job, it is important to encourage workers to learn essential skills that could open up many professional opportunities for their career growth. Employees in critical positions that lack critical skills should receive further career development assistance.

- **Employee (De-)Humanization**. Although some organizations acknowledged the pandemic's humanitarian crisis and prioritized employees' well-being as people over employees' well-being as staff, other organizations have forced their employees to deliver in high-risk environments with no or little assistance, treating them as workers first instead of people. It is important for an organiza-

tion to be deliberate in its strategy and consider the long-term impact on employee experience. If remote and on-site workers have been handled differently, it seems relevant to address the inequities and involve job workers in team culture, as well as foster an inclusive environment.

- **A rise in the number of top-tier employers**. Organizations were also dealing with increased employee requests for accountability before COVID-19. Workers and potential applicants would evaluate companies based on how they handled employees during the pandemic. It seems relevant to balance today's decisions to address immediate pandemic issues, by taking into account the long-term effects on the jobs' brand. Organizations should assist CEOs and corporate leaders in making relevant and effective decisions on executive pay cuts, for example, as well as ensure that the financial consequences will be borne mostly by executives rather than the rest of the workforce. Progressive companies collaborate freely and consistently to demonstrate how they value their workers through cost-cutting steps. It seems also relevant to look for ways to form talent-sharing alliances with other companies in order to help workers who have been affected by COVID-19 find new employment.

- **Designing for performance to designing for resiliency is a transition**. According to a 2019 Gartner company design report, 55% of the respective organizational redesigns mainly focused on streamlining functions, workflows and supply chains in order to maximize performance. This approach has not only captured efficiencies, but it additionally created vulnerabilities since systems are unable to give efficient responses to disruptions. It turns out that more resilient organizations were more able to adjust to shift and correct course faster. To increase agility and flexibility, plan tasks and structures around performance, and formalize how processes can flex to build a more responsive organization. Provide workers with a variety of positions that are adaptable and versatile so that they can gain cross-functional experience and training (Baker, 2019).

- **Increasing the size of the company**. Global M&A operation intensified after the global financial crisis, and several businesses were nationalized to prevent failure. As the pandemic fades, mergers and acquisitions (M&A) as well as the nationalization of companies will accelerate. Organizations will put the focus on enhancing their global diversification as well as investing in secondary markets in order to manage and reduce risk during periods of instability. The complexity of size and organizational management will increase as operating models evolve, creating challenges for leaders. Therefore, it seems relevant to allow the different business units to have an individual performance management customization. Nevertheless, what works for one business unit is not necessarily

an appropriate solution for others. As increasingly complex company structures tend to complicate career paths, providing re-skilling and career development solutions is highly important. For instance, it is becoming increasingly essential to expand platforms and to develop resources in order to provide useful insights into internal roles.

According to the KPMG (2020) report, organizations that did succeed in the new remote workplace as a response to COVID-10 should also implement plans for the whole workplace environment, as well as equip workers and support highly essential business operations. Organizations were able to rapidly and efficiently adapt to the new workplace by creating personas in order to understand how employees will want to work in the future and creating road maps to define main company touch points in the employee experience. Health authorities were recommended or mandated social distancing and self-isolation techniques, prompting businesses to rethink how they do business. Many businesses had responded quickly, doing whatever is necessary to keep the lights on and their workers secure. The main three factors to enhance employee experience were Socio-cultural (connection and communities), Digital and Tools (Interfaces and the right tools for the assigned task) and Environmental. The resettling, recovery and new reality/trend is explained in Table 2.

	Resetting	Recovery	New trend /reality
Digital and Tools	• Check if network/VPN can help remote working. • Evaluate the availability and resiliency of business-critical systems. • Change respective IT support models. • Make sure workers are able to do their jobs from home (hard- and software). • Verify cyber security capabilities	• Identification of AI/Automation enhancement areas. • Implementation of upgrades/enhancements to availability/reliability as required. • Identification of gaps across technology domains, development of options for filling gaps. • Adjust remaining IT operating models. • Implement tools for calculating workforce efficiency	• Designed for security and resiliency. • Large-scale implementations. • AI/Automation upgrades. • Innovative technology solutions that enable a mobile workforce.

	Resetting	Recovery	New trend /reality
Sociocultural	• Review employee assistance programs (EAPs), emphasizing accessible mental health resources. • Personalize experiences as much as possible, paying attention to employee involvement. • Allow variety of work styles, including flexible work schedules and ‘online' time.	• Create personas and prioritize specific and evolving needs by identifying job behaviours and behavioural trends within a community. • Implementation of mechanisms to catch the employees’ (keeping pulse on obstacles to engagement by looking at related journey maps, this enables to detect where exactly the relationship with the organization is breaking down and where additional contact might be required).	• Take action on the gaps identified during the persona requires analysis and pressure points on the journey chart. • Tailor participation tactics for those who are disproportionately affected by remote jobs, such as primary child care providers, parents, and other groups.

	Resetting	Recovery	New trend /reality
Environmental	• Use interactive collaboration environments to your advantage (e.g. Microsoft Teams, Microsoft SharePoint, Confluence, Jira, etc.) • Creation of new remote working standards, creation of expectations to foster a collaborative community.	• Develop workplace planning concepts that resonate with modern ways of working to improve leadership skills for managing in a remote workplace environment	• Creation of a socially supportive atmosphere, enabling an extended network for a positive motivational impact as well as a sense of belonging (by adjusting the respective organizational model, making sure it supports a remote workplace environment).

Table 2: Resetting, recovery and New reality/ working trend
Source: KMPG, 2020

Companies must have plans in place for the full workplace ecosystem, as well as to equip workers and to help highly essential business operations to succeed in the new remote workplace, according to COVID-19. Creating personas in order to fully grasp how employees will want to work in the future and road maps to define key company touch points in the employee experience can help organizations better adapt to the new workplace. Self-isolation and social distancing strategies are being instructed and recommended by health agencies, forcing companies to reconsider how their entire business model. Many companies have reacted rapidly, by doing whatever it takes to keep the business ongoing while making sure their employees are safe. As more employees discover that working remotely is a viable option, businesses must change their technology to better support their employees and business operations. Employee familiarity is vital to keeping workers connected, committed, and productive as companies adopt new ways of working. Organizations are obliged to take into account all three facets of the employee experience in order to rule what actions need to be taken.

The COVID-19 pandemic, on the other hand, generated an urgent need to accelerate labour changes. Many governments have concentrated on offering special unemployment insurance to employees who have been laid off. However, few projects have attempted to train and entice employees to work in understaffed industries. To be sure, this solution isn't a panacea; in recent months, consumer demand has plummeted, implying that certain job losses were unavoidable, necessitating the use of unemployment benefits. Nonetheless, an opportunity to help rebalance labour demand and supply at a crucial time has been overlooked, which might have softened the blow for many jobs. We need systems to quickly assess missing skill sets and retrain laid-off staff to correct this imbalance. This will necessitate rapid and seamless cooperation across industries, as the problem cannot be solved solely by the private sector or government agencies. We've had to accept the unsettling reality that much of what happens next in the global economy and job market is beyond our control. The best any of organisations can do is beginning imagining what could happen and strategize their next step. It's never been a better time to learn about upskilling and reskilling your staff or by an individual.

Upskilling is described as the preparation that allows someone to become better at a job they already do, while reskilling is defined as the acquisition of additional skills to help them transition to a new position. It's critical that we understand why upskilling and reskilling are essential, how effective they are, and how we can go about doing it. Learners become an adaptable force that can move and bend with any shifts in organisation as they continually respond to the market and develop new necessary skills (Mardinger, 2020). In this chapter, Sweden may serve as an example of such a strategy.

7.4. Reskilling and Upskilling : Case Study Sweden

When Sweden was hit by the COVID-19 crisis, white-collar employees soon learned to work from home (WFH). Working together while being geographically separated has been possible for a long time, thanks to cloud-based technology that allows for virtual meetings and document sharing. The pandemic changed people's perceptions, practices, and attitudes about using digital work methods for near collaboration, if possible. As a result, workplaces have been vacating during the pandemic and will continue to do so after it is over. What effect has the trend of working outside the workplace had on coworkers' work lives? What effect would the trend have on how businesses use their workspaces? What effect would this have on the Swedish phenomenon of Activity-Based Workplace? Because of its high level of digital development, Sweden was well prepared for working from home. The well-being and productivity of Swedish co-workers did not decrease, contrary to popular belief. Despite media reports of loneliness and workers working overtime, a comparative study found that people thrived while they were away from the workplace in general. A qualitative case study conducted in the spring with twenty interviews tells a similar tale. People's methods for separating work from the rest of their lives were re-negotiated, according to the study

conducted by Folkman (2020). Many experienced people increased their concentration, production, and productivity, but they also felt a lack of creativity and social life, according to Folkman report. Some co-workers yearned to get back to work. Others wished they would never have to return. Most felt that by holding more virtual meetings to minimize travel and advance co-worker cooperation, they would be able to maintain some of the habits they had learned and achieve a more versatile and productive working life.

Sweden has been a leader in shaping the future office through integrated changes such as Activity Based Workplaces (ABW), co-working spaces, and h-offices (working from other people's homes), to name a few. The ability to digitally adapt and low cultural hierarchy can explain why Swedes are eager to try out new office types. Physical distancing and office emptying are likely to continue to influence Swedes' usage of office space and Swedish companies' office strategies. In short, the pandemic will alter the office's future.

On a social level, decision-makers must adjust and adapt to the changing work climate in terms of HR policies, working time rules, and workplace accountability. On a corporate level, corporations must provide financial assistance for personnel's home offices in the form of the workplace and ergonomic equipment. Organizations must reconsider the purpose of their offices. Is it a communal space where people can meet and collaborate, or is it a private space where people can do analytical and concentrated work? Is it a place where you can work full-time or a place where people can come when they want to? Is it a venue for internal or external meetings? Is the office also a cultural and image-making space? The answers to these questions will aid in determining the office's geographical position, form, scale, and design. Individuals would need to renegotiate their plans for time and place, as well as the balance of their work and life relationships after the pandemic is over. This will have to be worked out between the staff, the boss, and the business. It would be claimed that the pandemic would result in a workplace revolution at ABW.

The ABW is a phenomenon that originated in Sweden, Holland, and, to a lesser degree, Australia. The ABW concept means that the office space is divided into zones dedicated to particular tasks. Often, near the entrance, in the middle of the house, near the coffee machines, there is a social room with a mutual atmosphere, which is like an oasis on the savannah where you meet colleagues. When they get farther forward, spaces for project work and meetings with a consistent amount of talk and noise become quieter areas with comfortable desks and chairs ideal for silent focused work. According to architects and change managers, the argument behind this trend is that work is no longer a matter of location or time. Work entails completing activities that are best performed in a number of environments and in cooperation with others. Furthermore, the switch to ABW is more than just a change of address; it's a change of mindset. Individuals and teams are given a lot of accountability, which leads to self-leadership. ABW is a digital, paperless way of working that is result-oriented, agile, and unregulated (Bäcklander et al., 2019).

The Swedish real estate company Vasakronan and the software company Microsoft of Sweden are two of the most well-known and well-tour successful office examples. Both are interested in exemplifying a modern efficient office, as efficiency is a key component of their business model. Many businesses, including government agencies, are embarking on the same transformational path by relocating, expanding, or changing their offices following ABW values. Surprisingly, these early adopters of the ABW are now moving on to ABW 2.0, which focuses on a central positioning and the prospect of collaborating with other companies. Last year, Microsoft relocated to a new office in Stockholm's central business district. They drastically reduced the office space and worked to reduce noise, increase meeting space, and include exclusive coffee machines and phone booths. Microsoft staffs have access to a limited section of the office. However, the majority of the new office is open to partners. Customers, clients, and suppliers are all welcome to work here and start new businesses in Microsoft's co-working space.

During the pandemic, Microsoft in Sweden shut down its office and is now completely online. Vasakronan will also move to a new office in Stockholm's central business district. They're building an office where they'll have limitless seating options for themselves as well as a co-working space for other startups and businesses. In the past year, the trend of central offices or co-working spaces, where workers come to work when it is convenient for them and companies pursue connectivity by co-working arrangements, has been illustrated (Bäcklander et al., 2019).

Apart from upskilling and reskilling, it is difficult to find and keep talented workers by any organisation. Employees who call in sick or, worse still, leave can have a huge effect on the productivity of the organisation. Absenteeism can cost businesses billions of dollars, according to a Forbes Magazine report (Haverstock, 2020). Organisation needs more workers due to increased product demand or to replace sick or former employees, they must have a plan in place. Hiring on-demand workers is similar to keeping a pool of employees on call, ready to work anytime you need them. Hiring and retaining staff can be challenging for a variety of reasons. The Conference Board predicts that blue-collar labour shortages would worsen in 2020 and beyond. On-demand hiring allows you to recruit temporary workers to fill in gaps in their workforce. Employees with unique skill sets are paired with businesses like they can use their talents through on-demand recruiting agencies. There are many firms, but only one offers a pool of qualified workers that you can draw from while keeping costs down (Conference-board, 2020). The following sub-chapter describe what is online ‘on demand’ employee, its needs and future.

7.5. On Demand Employee

Employees, who are on-demand, work in a flexible, zero-hours environment. As an on-demand employee, individual have a new schedule every day instead of the usual nine-to-five. For certain employees, this is the ideal work-life balance formula, as it allows them to have fresh and innovative experiences every day, never becoming

bored. On-demand jobs offer a variety of benefits that vary depending on your field, lifestyle, and preferences (Aloisi, 2021). Some advantages are covered below:

- **Work-Life Balance and Flexibility.** This is the most appealing aspect of on-demand employment. Working in an office job is rather inflexible; from Monday to Friday, you are at work all day. It can be difficult to fit this in if you have other needs or requirements in your life. Individual can easily build their own routine with on-demand work, which aids in achieving a balanced work-life balance. Furthermore, individual have other needs, such as childcare, elderly parents, or personal health problems, this way of working will help them in whatever way they see fit (De Stefano, 2020).

- **Dedication**. Working for a pay check for a particular business can be difficult if individual become dissatisfied with the work or with the company itself. With on-demand jobs, there's no stopping any individual from changing careers or working for a different business. On-demand employment frees you from thorny office politics, workplace social problems, and difficult contracts (Greene & Mamic, 2015).

- **The Lone Wolf is a fictional character**. On-demand work is ideal for those who choose to work alone. Some people enjoy work socialization, while others find it disruptive and detrimental to their productivity. If an individual believe in the above, he/she can be able to carve their own path in the workplace without being constrained by office culture (ILO, 2020).

Concept of ‘On demand’ employee not only benefited the individual but also the organisation too. Here are a few reasons why your organisation needs on-demand employees.

- **Efficiency in terms of cost**. Organisation should try the on-demand work model if they rely on distribution services, warehouse work, or widespread services in several locations. It will seem counterintuitive to hire workers on a "casual" basis and allow them to set their own hours. Nonetheless, it gives the company more freedom and sales. How do you do it? Organisations are not obligated to pay sick pay, insurance, or severance to their employees if they do not have a set salary or contract. This resulted in a massive cost reduction for their business (Aloisi, 2015).

- **Talent retaining is a difficult task**. When an organisation hires freelancers instead of full-time employees, they get the best of the best. If they employ a freelancer for a job and they don't work out, they were not obligated to rehire them or extend their contract. Similarly, if a freelancer fits in well with organisation, they can re-hire them on a rotating contract to keep their services (Cohen & Sundararajan, 2014).

- **Zones of time**. Hiring freelance on-demand staff will help organisation work in all time zones if they were a multinational organisation. Having casual workers all over the world allows them to work quickly and effectively, allowing them to stay ahead of the competition (Aloisi, 2021).

Every year, the on-demand working model becomes more common. With major corporations such as Uber, Amazon, and Deliveroo increasingly relying on on-demand employees, this economy is thriving. Platforms like FieldEngineer.com enable freelancers and employers to easily advertise their needs and services on the internet. It's becoming increasingly easy to function as an on-demand worker, thanks to the proliferation of these platforms. Many people would turn to on-demand employment to achieve greater work-life balance if fixed salaried jobs do not provide flexibility or remote working opportunities. Working to live, rather than living to work, is becoming increasingly relevant to younger generations who are taking control of their own.

8. Conclusion

The COVID crisis is expected to have the greatest effect on the most disadvantaged segments of the workforce. Workers with lower incomes and worse working conditions are disproportionately affected by economic restrictions. Women and young employees tend to be disproportionately affected. It's worth noting that these segments of the workforce are also likely to have less resource available to deal with unemployment and unexpected income losses. Unemployed people will face major difficulties in the short and medium-term, as they will have to search for work in an environment of low economic activity and job scarcity. Since the crisis is global and has a significant effect on investment, global supply chains, and foreign trade, jobs and economic growth are unlikely to be sufficient, at least in the short term, to mitigate the situation of the most vulnerable segments of the population. In this context, it appears critical to implement policies that provide income security and ensure that those who are most vulnerable have access to social protection. While such interventions are beneficial in alleviating and improving the economic and social conditions of the poor, they also help final demand, which is a critical driver of recovery and therefore an adequate measure.

Furthermore, the rapid increase in unemployment and the challenge of ensuring smooth labour market changes necessitate the use of short-term working schemes as well as proactive steps to assist job seekers. In certain nations, the effect of the recession on the labour market is likely to be much greater, to help the most vulnerable countries as well as developed countries. As we discussed in chapter 2 of this report, how the COVID-19 pandemic affected developed counties in the EU. As a result, a large proportion labour force suffered. On the other hand, COVID-19 pushed digitalisation with promoted remote working or Work from home. Teleworking has become more common as a result of the coronavirus crisis and related policies. As a result of the pandemic, more skilled force work adopted telework/AFH around the globe. In this chapter 3 we understand with the example of Japan, how teleworking and smart lockdown helped Japan to fight against the COVID-19 pandemic and also helped them to reform their economy. Many large corporations have thrived through the pandemic, particularly those in the technology, customer goods and pharmaceutical industries, by having business models which benefited from some aspects of the COVID-19 pandemic. Although many small businesses and employees are struggling to survive this pandemic, several large corporations have thrived through the pandemic. Especially those in the technology, pharmaceutical and consumer goods industries are among the winners, having business models benefiting from some aspects of the current crisis (e.g. healthcare demand, the rise in online shopping or shift towards remote workplace environment).

The four major tech companies Google, Apple, Facebook, and Amazon are forecast to make about $27 billion more in pandemic revenues this year than in the previous year. In Europe, Nestlé, Deutsche Telekom, ASML, and Telecom Italia are notable. The pandemic has also helped a number of large Chinese companies. In other middle-income countries, some companies emerged as big winners in the middle of the pandemic, such as Reliance Industries in India, BUA Cement in Nigeria, and MTN in South Africa. As a result of the lockdowns across Africa, profits for the latter are expected to rise by a whopping 169 percent. This threw the word K into the economy's recovery.

"K-shaped recovery" was first emerged as a term in 2020 to describe the economy's uneven recovery across economies, sectors, and demographic groups. Unlike other descriptors of economic recoveries and recessions that are letter-shaped (such as V-shaped or W-shaped, to name a few), a K-shaped recovery defines the direction economic variables that are disaggregated, e.g. income through society or jobs in a particular industry. Despite the fact that economic performance varies by sector, economists agree that recession and recovery cycles are common in almost all the economy's sectors. A so-called “K-shaped recovery” is distinguished by the fact that, while some sectors of the economy can recover quickly after the recession, others can rise slowly or even significantly decline. The general shape of such production of different components of the economy would resemble the letter K’s arms, with one increasing and the other decreasing, if the arms of a letter K were charted together. Its analysis and interpretation depends on how exactly the aggregate macroeconomic data is split to show the K-shaped profile.

This may lead to believe that certain industries quickly resume strong output growth while others decline, or for instance that certain asset prices increase while others decrease, or also that certain segments of society enjoy higher income and wealth, while other segments suffer losses. It could refer to any or all of these topics, or it could refer to something completely different. Several economic factors may contribute to a K-shaped recovery. As described by economist Josef Schumpeter, it may reflect creative destruction, which occurs in situations where new industries and technologies replace older industries and technologies during a recession. It may reflect the government's monetary and fiscal policy response to a recession, which could favour some sectors of the economy over others. Finally, it may simply reflect the initial recession's differential impact on different parts of the economy, particularly in cases where the recession corresponds with or is caused by negative real economic shocks that therefore impact certain parts of the economy. As a result, this might have long-term effects on them.

On-demand jobs are nothing new these days. We provide on-demand transportation, meals, and a variety of other services. It should come as no surprise that this idea will work in the workplace. On-demand staffing provides the organisation with a pool of vetted employees who are available when needed. Employers benefit from on-demand jobs because it reduces the costs associated with recruiting workers, gives

them more flexibility in the hiring process, and allows them to replace absent employees. On-demand jobs have a huge advantage in that they have complete control of their time especially in COVID-19 crisis.

To recover fast, many companies and countries adapted to the new working trend like WFH, ABW, teleworking or digital nomads etc. People all over the world began to experience this new working trend as "new normal" when the world was placed on lockdown due to the COVID-19. This new situation led to normalizing remote work, resulting in the widespread adoption of virtual collaboration, networking, and remote work technologies. While the COVID-19 pandemic limited mobility by closing borders, grounding planes, and restricting daily commutes, visions of a "remote-life" future began to emerge. Professionals around the world can begin to envision a future in which they remote-work from 'exotic' locations with lower living costs rather than WFH when they realize they are not physically tied anymore to their work stations or office spaces. The highly skilled professionals shifted with this change easily while this new trend forces semi-skilled labours to enhance their skill(s) otherwise they may lose their job. But COVID-19 severely affected low or no skilled labour. In other words, we can say that due to COVID-19 richer individuals became even richer, while the poor became poorer.

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