

**Università degli Studi di Padova**



**Department of Economics and Management**

Master Program in Business Administration

**REINVENTING THE WORKSPACE  
THROUGH THE HYBRIDIZATION  
OF WORK**

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*To my family,*

*To my friends*

*This dissertation is dedicated to the people who have made this journey even more intense and special, sharing with me joys and goals during these years of studies. I am profoundly grateful to all the people who have enriched my life with unforgettable experiences and moments and who have contributed to my personal and professional growth.*

*It is dedicated primarily to my family for having always supported and encouraged me in achieving my objectives and goals. A special thank is for my boyfriend Marco, who has always given me a great strength and has been by my side in every moment. My final and deep thanks to my friends of a lifetime, Martina, Benedetta, Denise, Valentina, and to my university mate who has become a life mate, Anna Chiara.*

*Without these people, the end of this journey would not have had the same value for me.*

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Firma

Alire Neghin

# INDEX

<b>INTRODUCTION &amp; SUMMARY .....</b>	<b>5</b>
1. CHAPTER .....	9
<b>HYBRIDIZATION OF WORK AS A DELIBERATE PHENOMENON .....</b>	<b>9</b>
1.1 Introduction.....	9
1.2 Towards <i>Hybrid Jobs</i> : a dynamic scenario.....	10
1.3 New skill set demand: need for a <i>Reskilling Revolution</i> ?.....	14
1.4 Deliberate hybridization .....	22
1.4.1 Job design as Strategy: in between deliberate and emergent approaches.....	22
1.4.2 <i>Hybrid jobs</i> as a deliberate transition .....	23
1.4.3 Investments and Risks. The active role of companies .....	24
1.5 Conclusion .....	25
2. CHAPTER .....	29
<b>HYBRIDIZATION OF WORK AS AN EMERGENT PHENOMENON .....</b>	<b>29</b>
2.1 Introduction.....	29
2.2 An insight of Digital Transformation .....	30
2.3 Artificial Intelligence: a threat for employment? .....	36
2.4 The Ecological Transition.....	42
2.4.1 Digitalization as an enable factor .....	42
2.4.2 Artificial Intelligence to accelerate the transition.....	44
2.5 How are <i>hybrid jobs</i> measured? .....	46
2.5.1 The Hybridization Wheel .....	46
2.5.2 The Clepsydra Model .....	48
2.6 Conclusion .....	49
3. CHAPTER .....	53
<b>WHY THE ORGANIZATION OF WORKSPACE MATTERS .....</b>	<b>53</b>
3.1 Introduction.....	53
3.2 Career management: what's new? .....	54
3.3 Reinventing the workspace. Physical and virtual dimensions.....	58
3.3.1 The emergence of Hybrid Work Model.....	58
3.3.2 A new organization of workspace .....	63
3.3.3 Towards a <i>hybrid</i> office.....	66
3.4 Looking ahead: virtual reality on the horizon? .....	70
3.5 Conclusion .....	73

4. CHAPTER.....	75
<b>EMPIRICAL RESEARCH.....</b>	<b>75</b>
4.1 Introduction.....	75
4.2 Research methodology: design, sampling, and data collection.....	76
4.3 Data analysis and descriptive statistics.....	77
4.4 Three main domains of interest.....	80
4.4.1 Workplaces.....	80
4.4.2 Space management.....	84
4.4.3 Time management.....	87
4.5 Managerial Implications.....	90
5. SOURCES.....	93
<b>REFERENCES.....</b>	<b>93</b>
5.1 Scientific Literature & Books.....	93
5.2 <i>Grey Literature</i> & Research Reports.....	94
5.3 Websites.....	100

## TABLES & FIGURES

Table 1	Age distribution .....	77
Table 2	Gender distribution .....	78
Table 3	Education distribution.....	78
Table 4	Marital status distribution .....	79
Table 5	Professional area distribution .....	79
Table 6	Working contract distribution.....	80
Table 7	Workplaces during the first lockdown.....	81
Table 8	Workplaces by professional area .....	81
Table 9	Workplaces by working contract .....	82
Table 10	Workplaces by gender and age .....	82
Table 11	Workplaces by marital status and education.....	83
Table 12	Space management during the first lockdown .....	84
Table 13	Space management by professional area .....	85
Table 14	Space management by working contract .....	85
Table 15	Space management by gender and age .....	86
Table 16	Space management by marital status and education.....	86
Table 17	Time management during the first lockdown .....	88
Table 18	Time management by professional area .....	88
Table 19	Time management by working contract .....	88
Table 20	Time management by gender and age .....	89
Table 21	Time management by marital status and education.....	89
Figure 1	Share of stable, new, and redundant roles: 2018 vs 2022 (projected).....	11
Figure 2	Projected Employment Growth (2018-2028).....	14
Figure 3	The New Foundational Skills for the Digital Economy .....	15
Figure 4	Top 15 skills for 2025.....	16
Figure 5	Share of jobs in Low, Medium, and High digital skills occupation (2002 – 2016) ..	19
Figure 6	Percentage of employers having difficulty filling jobs - from 2010 to 2021 .....	20
Figure 7	Job salaries with and without hybridizing skills .....	21
Figure 8	Types of strategies .....	23
Figure 9	Digitisation, Digitalisation and Digital Transformation .....	30
Figure 10	Digital Transformation action dimensions.....	31
Figure 11	Evolution of jobs .....	33
Figure 12	Digital Fluency Framework .....	34
Figure 13	Benefits of technology adoption .....	35
Figure 14	Cumulative jobs losses implied by automation between 2001 and 2016.....	38
Figure 15	The nine “AI for the energy transition” principles .....	45
Figure 16	The hybridization wheel .....	47
Figure 17	The clepsydra model.....	49
Figure 18	Opinions on the success of remote work .....	59
Figure 19	Productivity improvement: June vs. December 2020 .....	60
Figure 20	The two dimensions of hybrid work: Place & Time .....	61
Figure 21	Multiple hybrid models - percentage of remote work.....	62
Figure 22	Four steps for workplace reinvention .....	64
Figure 23	Five strategic categories for the workplace reinvention .....	65
Figure 24	Olympic House staircase .....	69
Figure 25	Three domains of interest .....	80



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## INTRODUCTION & SUMMARY

THE REASON FOR MY DISSERTATION – On November 27th *The Economist* published an article titled *How to manage the Great Resignation*, in which it questions how to deal with the high quit rate that began to increase in the post-pandemic period and which does not seem to want to stop, but rather needs a rethinking of strategies. Another face of the same phenomenon can be found in an article published on February 3th in the *Corriere del Veneto*, titled *Smart working in Jesolo doubles the number of residents: it will become a real city*, where it is pointed out how the spread of smart working consequent to the pandemic has led to a huge increase in the number of inhabitants of the seaside resort. In this regard, the municipality is dealing with the 2050 master plan in order to modify and adapt the city, transforming the dynamics of the pandemic into normality. What does the comparison between a great reality like America and a small reality like Jesolo highlight? Contrary to what someone might think, this phenomenon is not due to people's unwillingness to work, but it reveals that the world of work is definitely and profoundly changed and workers who have experienced remote working don't want to go back to old - and now obsolete - ways of working. A worldwide, pervasive, unstoppable phenomenon emerges and it turns out to be the result of the convergence of several factors. On one side, starting from March 2020, due to the pandemic, the increase of people in smart working has created a significant pressure in workplace design. Why? Because we were used to workplaces designed for physical presence and now we have to learn both how to rethink spaces and how to work in different places. On the other side, this emerging topic adds to another one, sprang up in 2016: the phenomenon of hybridization of work – driven, on one side, by the digital transformation and, on the other, by an evolution in the

ways of relating to others. The sum of these two factors opens up new reflections on the organization of work and leads to the recognition of a new theme which has become relevant, because the explosion of remote work has forced companies to rethink internal spaces: *the organization and management of workspace*.

THE AIM OF THE DISSERTATION – The major purpose of this master thesis is to investigate how organizations should rethink and reinvent workspaces (in terms of *physical space* and *organizational space*), in light of the effects of the pandemic and of some emerging, fast, unpredictable and global phenomena. At first, we are going to study how work is changing in terms of hybrid jobs, and afterwards we are going to analyze the consequences that all this generates in terms of design and organization of the workspace. In other words, the research objective is to detect how these two phenomena change the organization of work and, especially, the impact they have on the management of workspaces – which turns out to influence the performance, individual and team work, and to be one of the most promising fields in organisation studies. To achieve the set goals, our analysis will be guided to some extent through a theoretical approach and to some other through empirical research, leading us to elaborate interesting managerial implications.

CHAPTER 1 – HYBRIDIZATION OF WORK AS A DELIBERATE PHENOMENON - In the first chapter we introduced the concept of hybridization of work, exploring how this phenomenon is redefining existing jobs in new ways and is driving the rise of new roles. In this regard, it was highlighted how an increasing number of jobs are asking for unusual combinations of skills, that typically fall outside their strictly related domain, merging multi-disciplinary fields. After having provided an overview of the constantly evolving working framework, the focus shifted on the sphere of *skills*, which turned out to be the key point of the discussion. As a matter of fact, it was pointed out how new foundational skills – which could be categorized into three groups: human, digital, and business - are rewriting the DNA of the job market and how their combination ends up to increase their value. By comparing them with the skills actually supplied by the workforce, what emerged is a high level of talent shortage experienced, emphasizing the importance and the need for companies to play an active role and to promote reskilling and upskilling initiatives. These arguments allows us to create a connection with Mintzberg's strategies,

and in particular with the deliberate one, enabling the interpretation of the transition towards *hybrid jobs* as a result of intentions and strategic choices.

CHAPTER 2 – HYBRIDIZATION OF WORK AS AN EMERGENT PHENOMENON - In line with the previous one, this chapter aims to continue and complete the explanation of the hybridization of work through the Mintzberg's strategies, focusing in this case on the interpretation under an emergent key. After having exhibited some insights on Digital Transformation, emphasizing how complex and imperative it is for competitiveness, we explored the concept of digital fluency and the impacts and benefits of technology adoption both on workers and on work. It emerged that jobs are evolving from *standard*, to *hybrid*, to *superjobs*, becoming more digital and multi-disciplinary. Then, we shifted the focus on Artificial Intelligence and we wondered whether it might represent a real threat for employment, ending up finding that there is a *creative destruction* with both positive and negative outcomes. The central finding of the chapter is that the hybridization of work process is driven by both digital transformation and ecological transition; while the first component is rather intuitive, the second one is much more articulated and involve digitalization and Artificial Intelligences as enable factors. Finally, to close the chapter, two models for measuring hybridization were described and illustrated: the *Hybridization Wheel* and the *Clepsydra Model*.

CHAPTER 3 – WHY THE ORGANIZATION OF WORKSPACE MATTERS – The third chapter starts with an overview of what is happening in people's career management, investigating the reasons behind a very recent phenomenon concerning mass resignations – the *Great Resignation* - and discussing how to turn it from being a great attrition into a great attraction. We proposed and focused on one possible interpretation, which revolves around the workspace design and reinvention, pointing out the necessity to recognize the need of reimagining spaces where work is carried out. On one side, the great success of remote work cannot be ignored, on the other one, old and obsolete practices should be broken, opening the doors to the Hybrid Work Model and to a new organization of workspace. With this regard, we highlighted the new idea of office, which takes on a hybrid configuration and whose role is surprisingly different from the mere place where to work; conversely, we demonstrated as it is set to become a *social anchor*. In the end, we introduced the topic of virtual reality and its application in the workspace sphere,

accentuating its ability to reduce the perception of distances and to increase the sense of reality felt from a distance, widely expanding the boundaries of the office.

CHAPTER 4 – EMPIRICAL RESEARCH - This chapter describes the research carried out in June 2020 by *Osservatorio Professioni Digitali* focused on transformations taking place in the world of work, both as a result of industry 4.0 technologies and as a result of the emergency period linked to Covid-19. Data collected were illustrated and major information about the sample's profiles were provided through descriptive statistics. Then, we identified and analysed three domains of main interest: workplaces, space management, and time management. Interesting results have emerged, enabling us to elaborate interesting managerial implications.

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## HYBRIDIZATION OF WORK AS A DELIBERATE PHENOMENON

### 1.1 Introduction

It does not come as a surprise that the world of work is constantly evolving, as almost daily we are witnessing numerous changes in various fields. Using the words of Markow *et al.* (2018, p. 17), we can say that we have been navigating a «dynamic landscape of accelerating change» and certainly this creates strong implications for organizations and workers.

In such evolving framework, the *hybrid jobs* economy emerges and comes on rise. The World Economic Forum (2019) refers to this new phenomenon in the following terms:

«More and more companies are looking for combinations of skills that aren't usually found on the same resume - and may, until now, even have been thought of as opposites. Marketing roles call for expertise in statistical analysis; software engineers and IT project managers are supposed to bring creativity, visual design, and "soft" skills like teamwork with them; and moving up in sales takes expertise in CRM software...Welcome to the era of "hybrid" jobs».

The key word here turns out to be "skills". A study conducted by Burning Glass Technologies (2019) pointed out how new skills are rewriting the DNA of the job market and it observed that «just like you can understand an organism by examining its genome, you can best understand jobs by looking at their underlying DNA of skills» (p. 8). To make this parallelism more readable, it is useful to specify that jobs are intended as a way in which tasks and skills, needed to complete them, are organized (Burning Glass Technologies 2019). The same study suggested important new sets of skills employees need to build to adapt to the changes in the job market, and among them we find (p. 4):

- Developing skills in digital tools and digital technology.

- Becoming comfortable with analytics and data.
- Understanding the fundamentals of business and management.
- Thinking like a designer or creative.

This chapter aims to provide an overview of the transition towards hybrid jobs, and it sets out to answer the following question: is the transition deliberate? Paragraph 1.2 will illustrate the dynamic framework in which *hybrid jobs* are evolving and it will describe what this “new idea of job” is and its features (Butera 2020a, p. 164). Then, in paragraph 1.3 we will define the new foundational skills that have been in high demand in recent years and, comparing them with the skills supplied by the workforce, we will try to find out if reskilling initiatives are needed. Finally, in paragraph 1.4 we will focus the attention on the deliberate reading of the transition to hybrid jobs, turning out to be a result of strategic choices and of the active role of companies: specifically, we will explore job design as a strategy, comparing two different approaches – the deliberate and the emergent ones.

## **1.2 Towards *Hybrid Jobs*: a dynamic scenario**

At the beginning of 2020, the World Economic Forum (WEF) published a report headlined *Jobs of Tomorrow* that pointed out the emergence of new professions and skill requirements, underlining as the world of work is evolving at a rapid pace. The demand for skill portfolio has been changing, spanning a diverse set of competencies and, consequently, displacing existing jobs and giving rise to new ones (WEF 2020a). Interestingly, in this regard in 2016 it was found that by 2020 more than 75% of the skills considered crucial for most occupations will be composed of skills considered non-essential just four years earlier (WEF 2016).

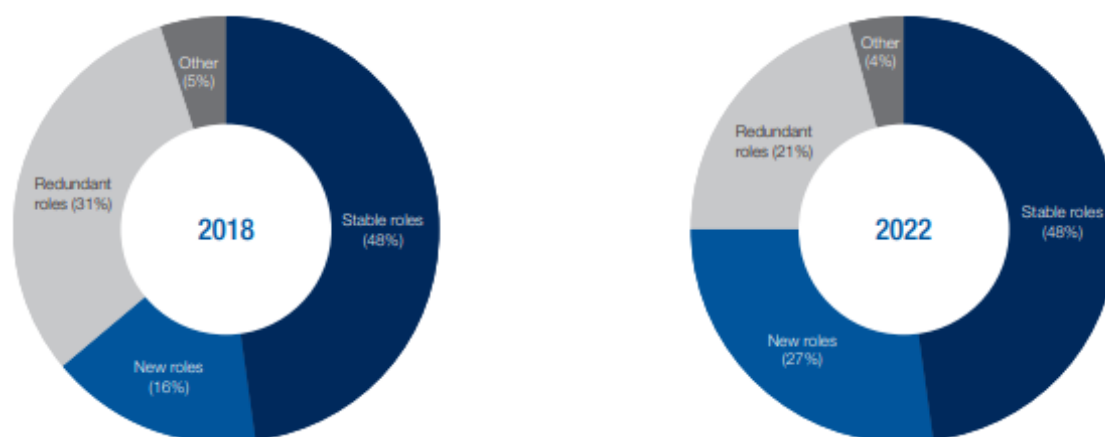
In such a dynamic scenario, demand for millions of new jobs has been emerging and according to the WEF (2020a), many factors have contributed to its creation:

- the Fourth Industrial Revolution;
- demographic change;
- industrial transitions;
- changing consumer needs.

Technological advancement, in fact, has been leading to a profound change in the configuration of the world of work, transforming, destroying, and creating jobs (JRC

2019; Burning Glass Technology 2019). According to what Brynjolfsson and McAfee stated in the book *The Second Machine Age* (2014), digital technologies are likely to substitute workers that possess exclusively ordinary skills; accordingly, some people are going to be left behind. On the other hand, the fields in which people will continue to hold a competitive advantage are estimated to be those of managing, advising, decision-making, reasoning, communicating, and interacting (WEF 2020c). In Figure 1 is represented a part of the rapid transformation we are witnessing.

Figure 1 Share of stable, new, and redundant roles: 2018 vs 2022 (projected)



Source: The Future of Jobs Report, World Economic Forum (2018b).

Data rely on a survey that took into consideration a sample of more than 15 million employees, and they show as new professions are set to enlarge their share of employment from 16% to 27% between 2018 and 2022, whereas redundant (i.e., declining) professions are set to move from 31% to 21% of the total employee base (WEF 2018b). Consequently, it is straightforward that some jobs are at risk, as companies have less need for some kinds of workers (Brynjolfsson and McAfee 2014), while others are emerging and increasing their presence in the labour market.

To highlight such evolving working landscape, in the first *The Future of Jobs* report of the WEF, published in 2016, it was estimated that 65% of children entering primary school would perform entirely new types of job that did not yet exist at the time.

In this dynamic setting, a «new idea of job<sup>1</sup>» is taking shape and it involves not only

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<sup>1</sup> The expression refers to the new phenomenon of hybrid jobs.

knowledge workers<sup>2</sup> but also more traditional and simple works (Butera 2020a), giving rise to a «transverse phenomenon» that spans all segments and sectors of the labour market (Gubitta 2020), «entering every domain of business» (Burning Glass Technologies 2019, p. 3).

The research-project *Blurring Lines: How Business and Technology Skills Are Merging to Create High Opportunity Hybrid Jobs* conducted in 2015 by Burning Glass Technologies<sup>3</sup>, led to the first identification of the hybrid trend, outlining how different skills mix each other and give birth to new jobs. Curiously, the analytic software company used the expression *blurring lines*, referring to the creation of boundaries between occupations that are not so well defined, but, on the contrary, that are merging with each other.

Continuing along the same line of study, few years later it was pointed out more in details how these jobs require skills belonging to different and unrelated organizational functions, highlighting consequently their multidisciplinary nature (Burning Glass Technologies 2019). If we adopt a different perspective, we find the previous observations confirmed by the increase in the *job variety*, which emerges as a consequence of the progress of industry 4.0 technologies (Shaba *et al.* 2019). Therefore, the multidisciplinary nature of the jobs is matched by the multitasking profiles of the workers, as they are asked to perform a series of different tasks.

### ***Definition of hybrid job***

Cambridge Dictionary defines the term *hybrid* as «something that is a mixture of two very different things<sup>4</sup>». In accordance with this definition, *hybrid jobs* are «complex and multidisciplinary jobs, often blending logical, organized thinking with creative, artistic right-brain thinking» (Blick 2019). Moreover, as Burning Glass Technologies (2019) argued, these jobs «require a wide set of skills from different field» (p.3) and «combine skills that never used to be found in the same job» (p.6).

To give a more precise idea of what hybrid job is, Gubitta (2020, p. 221) defined it as following:

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<sup>2</sup> “They operate on immaterial processes, the immediate output of which is new knowledge” (Butera 2020).

<sup>3</sup> It’s an analytics software company that provides real-time data on job growth, skills in demand, and labour market trends.

<sup>4</sup> <https://dictionary.cambridge.org/dictionary/english/hybrid>

«A job that combines and integrates technical, managerial, professional or relational skills with IT and digital skills, the knowledge to communicate in social networks, the skills to interact with other people through mediation or the use of digital technologies, guidelines for carrying out one's business effectively in work environments in which space (physical and social) and time (corporate and personal) take on different configurations».

The complex nature of this phenomenon, evidently focused on the skills sphere, manifests itself in the multi-field feature, as it involves not only technical-professional skills, but also digital-technological and relational skills, thus embracing a large number of different areas. In fact, despite being highly *technology-driven jobs*, they are at the same time very *human* and rarely associated with *rote and repetitive tasks* (Burning Glass Technology 2019).

Butera (2020a, p.), taking a slightly different perspective, more people-centred, referred to *hybrid jobs* in the following terms:

«These are jobs that arouse commitment and passion. Jobs made of positive relationships between people and machines. Jobs that also include the workplace within, i.e. the workplace that is inside people: their training, their work and personal histories, their aspirations and potential. Jobs with moving boundaries with lifetime, both characterized by good/high quality».

To move forward, it is necessary and important to point out that *hybrid jobs* are not perforce new, but all of them «redefine existing jobs in new ways» and «drive the emergence of entirely new roles» (Burning Glass 2019, p. 15).

### *Resistance to automation*

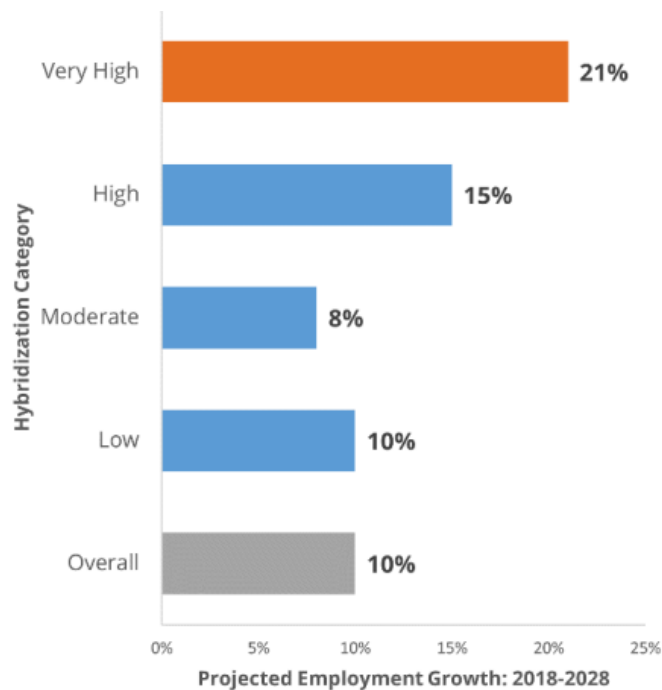
As already mentioned above, technological progress is having strong repercussions on the job world, both on work and on workers. As regards, in particular, workers endowed of only ordinary skills, the risk of being replaced by digital technologies is quite high. On the other hand, the perspective is completely different for that slice of people who are sufficiently familiar with technology and know how to use it to create value, so for workers «with special skills or the right education» (Brynjolfsson and McAfee 2014, p. 11).

A study conducted in 2019 on the substitute power of technology showcased that 42% of traditional jobs could potentially be replaced by technology, while the percentage drops to 12% as concerns *hybrid jobs* (Burning Glass Technology 2019). The reason for this huge difference, according to Butera (2020a, p. 161), is that «the replacement capacity of

digitization is objectively limited» and it has little room for action on jobs characterized by a complex and multidisciplinary set of skills.

Resistance to automation makes these jobs expand more and more. In fact, we are moving exactly in this direction, and, in support of this, it has been estimated that hybrid roles grow twice as fast as jobs overall: the former at a rate of 21% over the next years, while the latter at 10% (Burning Glass Technologies 2019).

Figure 2 Projected Employment Growth (2018-2028)



Source: Burning Glass Technologies (2019).

This trend is further supported by hiring data, that reveal the growing interest in more *heterogeneous* profiles, characterized by a combination of both hard and soft skills, which were not usually found in the same individual (Chamorro-Premuzic 2021).

Therefore, previous considerations lead us to conclude that *hybrid jobs* are in high demand and set to expand even further.

### 1.3 New skill set demand: need for a *Reskilling Revolution*?

What could have been considered distinctive a few years ago - i.e., special qualities that allow to be more competitive -, is no longer enough and it's now seen as only threshold - i.e., the minimum required. Basically, a strong need to redefine the required set of skills emerges. Summing up in a few words, «the advanced skills of the past become the

foundational skills of the future» (Markow, Hughes and Bundy 2018, p. 18).

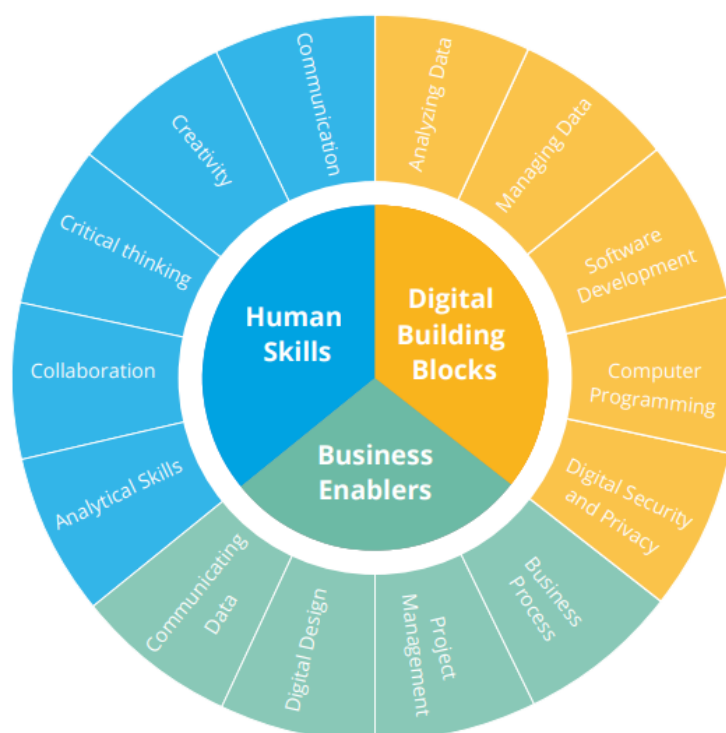
### ***New Foundational Skills***

The research *The New Foundational Skills of the Digital Economy: developing the professionals of the future* (Markow, Hughes and Bundy 2018) led to the identification of 14 skills that are considered foundational in the new economy, and that were in great demand as early as 2018. Interestingly, they are not only limited to the digital economy or to technical professions, but they extend to most of the jobs, spreading quickly throughout the economy.

As we can see in Figure 3, these skills fall within three large interrelated groups:

1. *Human skills*, also known as “soft skills”.
2. *Digital skills*, which are becoming more and more useful even outside of traditional digitally intense jobs.
3. *Business skills*, which play a role of synthesis and integration in the workplace.

Figure 3 *The New Foundational Skills for the Digital Economy*



Source: Markow, Hughes and Bundy (2018).

One of the most important findings of the study is that the 14 skills increase their value and lead to substantial advantages when combined with each other, leading in this way to

the creation of the *Blended Professionals*. Consequently, by mixing and matching these skills (i.e., through their *hybridization*), they are in the position to keep pace with change in a world that is becoming increasingly digital and dynamic (Markow, Hughes and Bundy 2018).

In recent years, the topic of new skills has attracted the interest of many searches, underlining in this way the «dynamic landscape of accelerating change» in which we are navigating (Markow, Hughes and Bundy 2018, p. 17). Among them a study (WEF 2020c) emerges, according to which 15 skills - listed in Figure 4 - will become increasingly important for employers by 2025.

Figure 4 Top 15 skills for 2025

1	Analytical thinking and innovation	9	Resilience, stress tolerance and flexibility
2	Active learning and learning strategies	10	Reasoning, problem-solving and ideation
3	Complex problem-solving	11	Emotional intelligence
4	Critical thinking and analysis	12	Troubleshooting and user experience
5	Creativity, originality and initiative	13	Service orientation
6	Leadership and social influence	14	Systems analysis and evaluation
7	Technology use, monitoring and control	15	Persuasion and negotiation
8	Technology design and programming		

Source: World Economic Forum (2020c).

Combining these results with those of the previous research (Markow, Hughes and Bundy 2018), the importance of critical thinking and analysis, problem-solving, management, communication, emotional intelligence, creativity, and technology use is evident.

To conclude, focusing on the European situation, the Joint Research Centre<sup>5</sup> (JRC, 2019) revealed how the «UE labour market is demanding more non-cognitive and digital skills, and specifically a combination of both», and now we will go into these two categories in depth.

### *Hard vs. Soft skills*

*Soft Skills Are 2020's Hard Skills - Here's How to Master Them* is the title of an article published by Forbes in January 2020 and it clearly emphasizes the strong significance that soft skills are assuming compared to the past. Although hard skills continue to play

<sup>5</sup> The European Commission's science and knowledge service.

a decisive role in the success of workers, recent studies have led to the recognition that their importance in terms of intensity has started to decrease since 2000 (Deming 2017). With regard to soft skills, there is not a universal definition, and this is reflected in the variety of different terminologies used to refer to them, such as: «non-cognitive skills, personality traits, character skills, human literacy, 21st century skills, life skills, key competences, or social and emotional skills» (JRC 2019, p. 31). Citing the title of an article published in Johns Hopkins University Press, soft skills are a «phrase in search of meaning» (Matteson *et al.* 2016).

Research showed that hard skills are typically easier to define and measure than soft skills, in terms of both validity and reliability (Deming 2017). This occurs mainly because soft skills are *innately human*, they relate to individuals' different properties or attributes, personal traits, behaviour and thinking (Anderson 2020; Deloitte 2019). Hence, the *personal* character makes them difficult to assess and quantify.

In other words, soft skills concern the way in which employees perform a task; that is, how they make decisions, adapt to situations, collaborate with each other, face and solve problems (Anderson 2020). In contrast, hard skills refer to the ability of employees to do a specific task and while they consist of «specialized knowledge and technical abilities» developed to carry out specific jobs, soft skills are a collection of people management skills that embrace almost the whole professions and job positions (Anderson 2020; Matteson *et al.* 2016). Differently from the former, the latter are highly flexible and adapt to different circumstances (Deming 2017), helping workers thrive in a wide range of roles and sectors (Anderson 2020). What emerges is that soft skills are «transferable» and «applicable to any other skill set or work context» (Markow, Hughes and Bundy 2018, p. 21), as opposed to hard skills that turn out to be highly specific.

In an extremely dynamic world, adaptability to change is becoming increasingly important. Indeed, specific skills can become outdated or they may not be exploitable in very different areas, whereas soft ones have a nearly infinite duration and they easily resist diversity. It's pivotal to point out that, contrary to what might be common belief, soft skills are «more likely -not less- to be in demand in digital-intensive jobs» (Markow, Hughes and Bundy 2018, p. 21). Indeed, new technologies increase the importance and the demand of those skills for which there is not a good substitute (Autor 2015). Therefore, since soft skills are difficult to automate (Deloitte 2019) and represent an area

in which machines can't compete (LinkedIn Talent Solutions 2019), they are becoming increasingly valuable. As we will see in the next chapter, digital transformation is more about people rather than technology, because, since it is not possible to know the hard skills of the future, the best thing is to invest in people who could easily develop them. (Frankiewicz and Chamorro-Premuzic 2020).

It has been forecasted that by 2030 nearly two-thirds of all jobs will be classified as «soft skill-intensive occupations» (Deloitte 2019). Comparing this data with the one recorded in 2000, which was about half of all jobs, the growing trend is surely evident. Furthermore, it was found that the pace at which the number of jobs in this soft skill-intensive occupations has been growing is 2.5 times faster than the number of jobs in the other occupations (Deloitte 2019).

These findings have been confirmed by a global survey targeting 5.000 HR professionals and hiring managers, conducted by LinkedIn Talent Solutions. The 2019 Global Talent Trends revealed the four job trends most likely to affect the next few years and in the first place we find exactly the soft skills, with 91% of talent professionals agreeing on the importance of these skills for the future of recruiting and HR. In addition, the survey revealed how crucial these types of skills are in making or breaking a hire, and in making or breaking a company. Precisely, 92% of respondents state that soft skills matter as much or more than hard skills when they hire, 89% believe that the cause of bad hires generally lies in the lack of soft skills, and 80% of them consider soft skills increasingly important for the company success.

Focusing on hybrid jobs, the significance and the value of these skills turn out to be even greater. Indeed, according to the results of an analysis conducted by Burning Glass Technology (2019), the demand for soft skills in *hybrid jobs* is between 6% and 15% - depending on the specific soft skill considered - more than in other jobs.

### ***Digital skills***

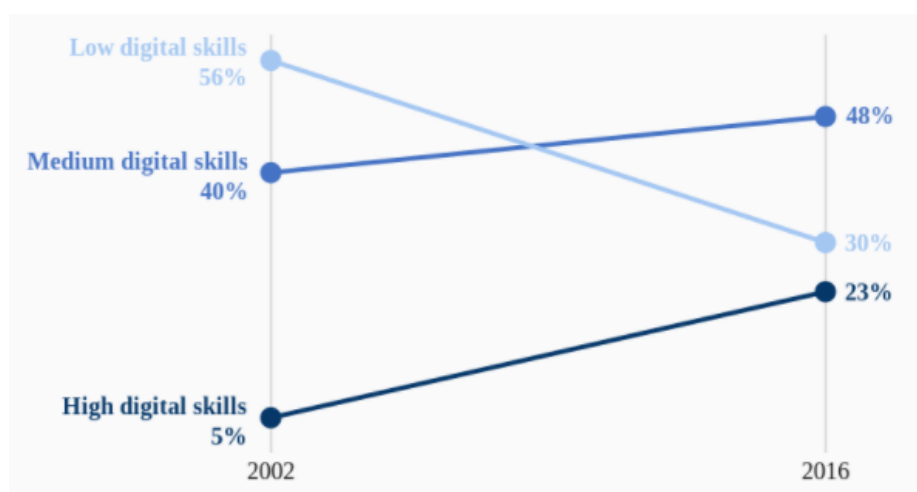
Now let's shift our attention to another category of skills that are highly demanded in the world of work. To give a complete picture of what digital skills are, let's consider the definition used in *The Changing nature of work and skills in the digital age*, a report written by the Joint Research Centre (2019, p. 30):

«Digital competence involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking».

As it is commonly known, digital skills are widely required in the most technologically advanced sectors and for highly qualified profiles. However, a study conducted by Burning Glass Technology (2017) on American workers showed that digital skills are in wide demand even in the middle-skill labour market. Precisely, the study found that more than 8 in 10 middle-skill jobs (82%) require digital skills. Considering that middle-skill jobs (i.e., those that typically do not require a bachelor's degree), represent almost half of all labour demand, the result reached is even more significant and it showcases the widespread diffusion of this type of skills.

Another study (Muro *et al.* 2017), that analysed American jobs over a time span between 2002 and 2016, pointed out the rapid growth in the share of jobs that require substantial digital knowledge.

Figure 5 Share of jobs in Low, Medium, and High digital skills occupation (2002 – 2016)



Source: Muro, M. *et al.* (2017).

As Figure 5 shows, occupations requiring high digital skills are the ones that have grown the most, passing from only 5% in 2002 to 23% in 2016. On the contrary, low digital skill occupations have fallen sharply from more than a half in 2002 to only 30% in 2016.

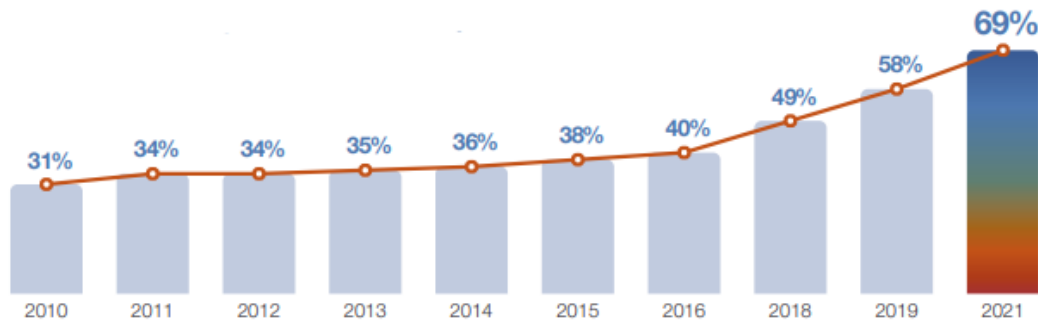
Therefore, we can conclude that employees need to develop skills in digital tools and digital technology to adapt to the changing labour market. This topic will be further

explored in the next chapter, where the technologies' impact on work and the profound digital transformation we are experiencing will be analysed in more detail.

### *Talent shortage and Reskilling need*

A recent study of ManpowerGroup<sup>6</sup> (2021) revealed that we are experiencing the highest levels of global talent shortages over the past 15 years, with 69% of employers reporting difficulties in finding skilled talent to fill vacancies. This value rises to 74% in companies unable to offer flexibility. As shown in Figure 6, the curve, indicating the difficulty in filling open jobs, began to slope rapidly starting from 2016, just in conjunction with the advent of hybrid jobs.

Figure 6 Percentage of employers having difficulty filling jobs - from 2010 to 2021



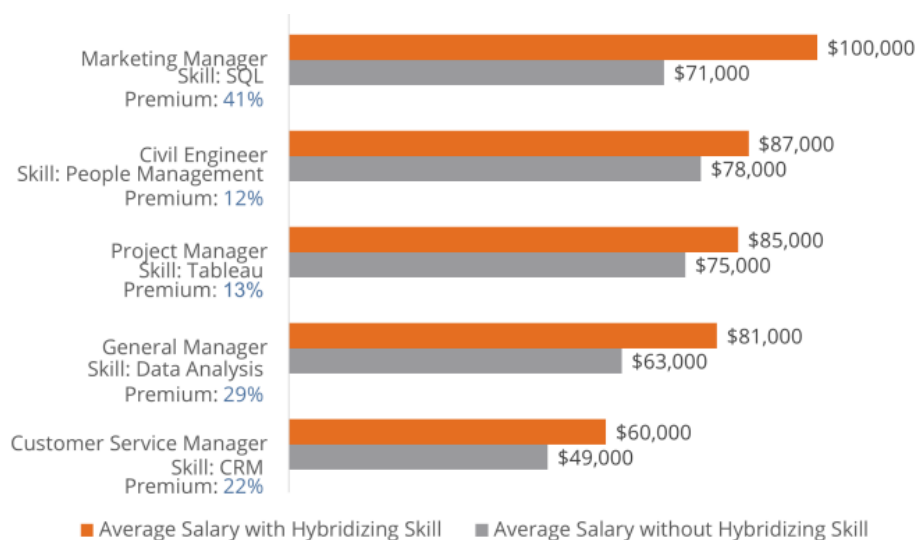
Source: ManpowerGroup (2021).

Indeed, the challenge for employers is even harder when they look for a combination of skills and the more unusual these combinations are, the fewer qualified candidates they can find (WEF 2019). Matt Sigelman, CEO of Burning Glass Technologies, observed as recruiters refer to these rare talents with the term *purple squirrels*, emphasising their scarcity and huge demand (WEF 2019).

According to Burning Glass Technologies findings (2019), employers are willing to pay a premium to attract and retain them, and in some cases, they offer a very significant one. For instance, a General Manager endowed with data analysis skills earns, on average, 29% more than those without them; or a Marketing Managers with expertise in database usage, earn 40% more than those who lack it.

<sup>6</sup> Multinational leader in global workforce solutions.

Figure 7 Job salaries with and without hybridizing skills



Source: Burning Glass Technology (2019).

In the last few years, several studies focused on the skill gap and on the discrepancy between competences possessed by workers and those required by the labour market to remain competitive. Taking into consideration the two categories of skills mentioned above, it emerged that: from one side, the demand for soft skills overcomes the supply by 45% (Deloitte 2019); from another one, according to the Digital Economy and Society Index (DESI), 42% of European workers lack basic digital skills, with just over half of them having at least a basic level (European Commission 2020).

Accordingly, it becomes necessary and of primary importance to understand how to bridge these evident skill gaps. An answer was provided by the World Economic Forum (2018a), which placed the emphasis on the urgency of reskilling and upskilling strategies. The main difference between these two concepts is that upskilling is the «development of additional skills to help make someone more valuable in their current role», whereas reskilling is the «development of significantly different skills to make someone suitable for a different role<sup>7</sup>». Therefore, in the second case an accentuated change component emerges with respect to the first one.

The need for reskilling is also confirmed in a study conducted by DigitalEurope<sup>8</sup> (2020), which led to the finding that 52% of the European workers need reskilling due to the profound changes occurred in the job market. Furthermore, according to *The Future of*

<sup>7</sup> <https://learn.g2.com/upskilling-and-reskilling>

<sup>8</sup> It is the leading trade association representing digitally transforming industries in Europe.

*Jobs Report 2020*, 94% of business leaders expect employees to develop new skills on the job; a sharp increase compared to 2018, when it was 65% (WEF 2020c). Interestingly, it was revealed that when employers don't find the *ready talent* they need, they offer reskilling and upskilling opportunities to their workforce, around 62%. However, only 42% of them decide to take part in these activities, showing in this way how employee involvement is not up to date with the interest of employers (WEF 2020c).

## 1.4 Deliberate hybridization

### 1.4.1 Job design as Strategy: in between deliberate and emergent approaches

What emerged from initial considerations (see paragraph 1.2) is that jobs are in the midst of a profound change, and in this dynamic landscape *hybrid jobs* are growing twice as fast, at a rate of 21% compared to the 10% of overall jobs (Burning Glass Technologies 2019).

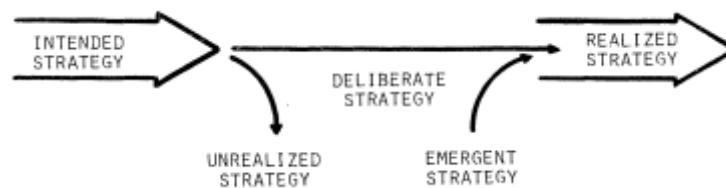
Is the transition towards the so-called *hybrid jobs* deliberate, meaning something that can be governed and managed? Or is it an emerging phenomenon, meaning something that gets out of hands, as result of a change that cannot be managed? What we are going to present is the answer to these questions.

The trade-off between deliberate approach and emergent approach creates an assonance with a concept consolidated in literature and introduced by one of the leading scholars of strategy and organization, Henry Mintzberg. What we are going to do is to adopt the same interpretation and use the strategies identified by him in an instrumental way to explain and interpret the hybridization of work.

Shifting the attention on the strategic dimension of the transition towards these new jobs, it becomes necessary to specify the meaning of strategy before going on. Over the years, several definitions have been attributed to this concept and among them emerges the one developed by Henry Mintzberg, who described it as «a pattern in a stream of decisions and actions», arguing that «strategies could be not only implemented after being formulated, but also defined by behaviours» (Mintzberg 2007, p.1). According to its studies, strategy does not always represent the result of deliberate and intentional choices, but in some cases, it can be the outcome of a set of differently conscious conditions and decisions (Paci 2014).

As early as 1985, the report titled *Of Strategies, Deliberate and Emergent* written by Mintzberg himself and Waters, explored the complexity and variety of strategy formation process and focused on the relationship between plans and intentions. The comparison between *intended* and *realized* strategies led to the distinction between *deliberate* strategies, which are «realized as intended», and *emergent* ones, which are «realized despite, or in the absence of, intentions» (Mintzberg and Waters 1985, p. 257).

Figure 8 Types of strategies



Source: Mintzberg and Waters (1985).

Going into more detail, Mintzberg and Water set some conditions in the presence of which a strategy can be defined as *pure deliberate* or *pure emergent*.

To be pure deliberate:

- There must be *precise intentions*.
- Intentions must be shared between all actors.
- Intentions must have been realized exactly as intended, with no external interference.

On the other hand, to be pure emergent, there must be absence of intentions.

These conditions imply, in the first case, the presence of a perfect predictability of the environment and of a complete control by the organization, and, in the second case, a total predominance of the environment; ending up underlining the great rarity of these pure forms. Indeed, as Mintzberg and Waters observed (1985, p. 257), deliberate and emergent strategies «may be conceived as two ends of a continuum along which real-world strategies lie».

#### 1.4.2 *Hybrid jobs* as a deliberate transition

The transition to *hybrid jobs* can be interpreted as deliberate, since companies act intentionally - therefore, following an *intended* strategy -, requesting and showing a high demand for hybrid skills. As pointed out in Burning Glass Technologies' study (2019), employers are willing to offer a significant premium - sometimes even 30-40% more - to those workers who demonstrate mixed skills, previously called *blended professional*.

Accordingly, we may infer that some specific jobs, if performed by people endowed with hybrid skills, lead to advantages such that companies are willing to pay more.

Therefore, an *intended* strategy, that manifests itself in the demand for hybrid profiles and in the employers' expectation that workers take refresher courses on their skills (WEF 2020c), is followed by a correspondent *realized* strategy, that manifests itself in the hiring of hybrid profiles.

On the other hand, the transition to these *new* jobs can also be read in an emergent key, according to which there is not a perfect correspondence between *realized* and *intended* strategies, but what is realized at the end depends on external factors - not predictable or controllable. This emergent perspective will be explored in depth in chapter 2.

### 1.4.3 Investments and Risks. The active role of companies

The emergence of new jobs has made pivotal for both companies, people, and governments, to take an active role. This is particularly noticeable in the words used by Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, in the preface of *The Future of Jobs Report 2018*:

«It is critical that businesses take an active role in supporting existing workforces through reskilling and upskilling, individuals take a proactive approach to their lifelong learning, and governments create an enabling environment to facilitate this workforce transformation. This is the key challenge for our time».

Focusing on companies' perspective, a recent survey revealed that companies intend to provide reskilling and upskilling opportunities to 73% of their workers (WEF 2020c). Although employers are cognizant of the fact that in few years nearly a half of the skills required of employees to effectively perform their role will change, this is a necessary choice in order to adapt to the ever-changing work environment (WEF 2020c). Another relevant finding from the same survey is that about 66% of employers expect to get a return on these investments within one year, making evident the recognition of the value of human capital investment.

However, a relevant part of interviewed employers (17%) has some doubts on having any returns because of the high level of risk involved. The risk perceived may be attributed not only to the uncertainty about the future, but also to the presence of information asymmetries and potential opportunistic behaviour of workers. Indeed, this phenomenon

may be interpreted as a sort of *moral hazard*, according to which companies invest in training programmes and expect positive returns from them, taking at the same time the risk that trained workers may decide to pursue their own interests at the expense of the counterparty and to change companies, nullifying in this way the previously made investments. Another risk incurred by employers is represented by the low level of employee involvement in the training initiatives offered, with less than half of the affected workforce deciding to participate (WEF 2020c).

The active role of companies is not limited to upskilling and reskilling investments, but it also extends to the digitalization of processes, which consequently changes the way of working. Making investments in this field, companies aspire to have activities for which *hybrid jobs* are required. Accordingly, a skills portfolio enlargement is needed, because when a worker is placed in a digitized context, he must acquire digital skills in order to take advantage of the opportunities offered. Furthermore, it is important to mention that organizations decide to adopt new technologies and to move towards digital transformation because this makes them more efficient and more responsive to change (Accenture 2020). In addition to this, it has been shown that the most digitally fluent organizations achieve higher revenues, and this represents a strong drive for action (Accenture 2020).

## **1.5 Conclusion**

We are living in the *era of hybrid jobs*, since an increasing number of jobs are asking for an unusual combination of skills from different fields (WEF 2019). Professions of the future, indeed, are driven by both digital and human factors, consequently reflecting the adoption of new technologies on the one hand, and on the other one the increasing importance of human interaction (WEF 2020a). This *transverse phenomenon* spans all segments and sectors of the labour market (Gubitta 2020), redefining existing jobs in new ways and driving the rise of new roles (Burning Glass Technologies 2019).

At the beginning of the chapter, we saw how *hybrid jobs* are in high demand and set to expand even further. Moreover, we pointed out that they are less likely to be replaced by machines (Burning Glass Technologies 2019), and in a world that is becoming increasingly automated, resistance to automation makes these jobs expand more and more.

As regards hybrid skills, it's pivotal to point out that they are not *job*, *firm*, or *industry* specific - i.e., skills that characterize a particular profession, company, or industry - but «they have value in nearly all the professional contexts» (Gubitta 2020, p. 222). In addition to this consideration, it was argued that as the overlap between the roles' contents, traditionally associated to different areas, increases, skills can be spent in a broader market, which translates into greater employability when searching for a job (Gubitta 2020).

Importantly, the drivers of the hybridization are certain disruptive skills that are not always new, but they typically fall outside their occupation group, combining multiple functional domains (Burning Glass Technologies 2019). Given the strong relevance that skills turn out to have, we then shifted the attention to the *New Foundational Skills* - categorized into 3 groups: human, digital, and business - that have been disrupting the working landscape in the last years. An important finding highlighted how these skills increase their value when combined with each other, leading in this way to the creation of the *blended professionals* (Markow, Hughes and Bundy 2018).

Subsequently, after the comparison between hard and soft skills and the brief look at the emergence of digital skills, we focused on the huge talent shortage we are experiencing - the highest over the past 15 years (ManpowerGroup 2021) - with many difficulties for employers in filling vacancies due to the great rarity of the so-called *purple squirrels* (WEF 2019). This led to the conclusion that companies need to play an active role and that reskilling and upskilling strategies are critical to find the talent they need (WEF 2018a).

To this regard, we went in depth on the strategic dimension of the transition towards *hybrid jobs* and we considered Mintzberg's strategies as a sort of tools. From their comparison, it emerged that deliberate strategies are the result of a logically rational formulation process, while emerging strategies are the product of incremental decision-making processes (Paci 2014). Therefore, looking at the transition through a deliberate key, we might argue that there is an expectation of rational behaviour by companies, which make investments in training and digitalisation, expecting to have a consequent change in the way of working, that will express then into benefits. Accordingly, there is a high demand for workers who demonstrate mixed skills from multi-disciplinary fields, and this translates into companies willing to offer big premium to capture them,

sometimes even 40% more (Burning Glass Technologies 2019).

To conclude, this chapter explained the transition towards *hybrid jobs* as a *deliberate* phenomenon, since companies intentionally ask for hybrid skills and aspire to hire hybrid profiles; the next chapter will provide an *emergent* view of the transition.



## HYBRIDIZATION OF WORK AS AN EMERGENT PHENOMENON

### 2.1 Introduction

The development of digital technologies has promoted a real transformation in the life both of people and businesses. In an increasingly digital world and an extremely dynamic and unpredictable economic environment, *Digital Transformation* proves to be imperative to remain competitive. Precisely, what used to be an aspiration for companies, in recent years has become a priority, and now it's a question of survival (Accenture 2020, p. 2). Companies need to rethink «organizational structure, leadership, workplace culture and work itself» (Putre 2019, p. 13).

Therefore, the pace given by technological advances has a major impact on work: on the one hand, it reduces some activities, consequently facilitating certain tasks or leading to the elimination of certain jobs; on the other hand, it leads to the creation of new jobs, which require a different set of skills and abilities. This results in a reduction or enlargement (in some cases, both of them) of workers' skills portfolio, which organizations have to face and manage – consequently leading to a *hybridization* between different areas of skills.

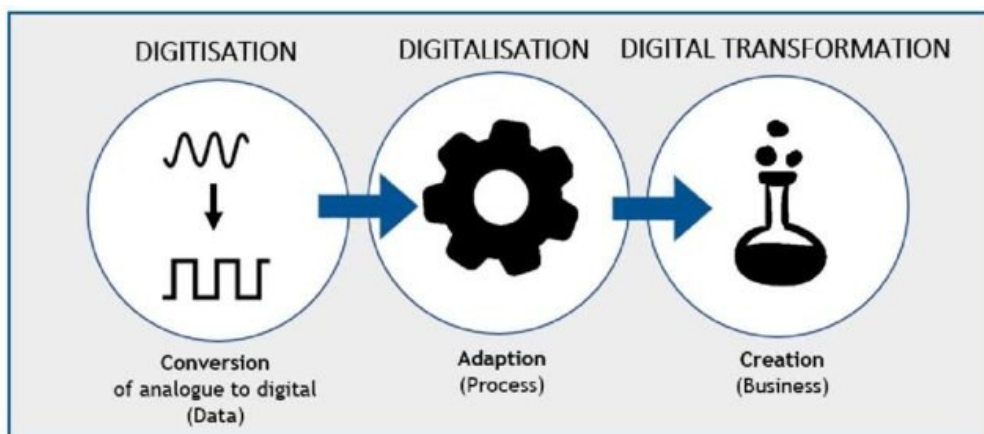
In line with the previous one, this chapter aims to continue the explanation of the transition towards hybrid jobs, and it sets out to answer a parallel question: is the transition emergent? Paragraph 2.2 will provide an insight of Digital Transformation, explaining what digital fluency is and describing the impacts and benefits of technology adoption. Then, in paragraph 2.3 we will focus on Artificial Intelligence, investigating whether it can really represent a threat for employment; more in detail, we will explore and compare the job destruction vs. job creation and automation vs. augmentation

strategies. Paragraph 2.4 will introduce into the discussion the Ecological Transition and it will explain in which extent it drives the hybridization of jobs. Eventually, in paragraph 2.5 the focus will shift to measuring hybridization with the exploration of two models: the *Hybridization Wheel* and the *Clepsydra Model*.

## 2.2 An insight of Digital Transformation

In the previous chapter we saw how the Fourth Industrial Revolution is interacting with various factors, both socio-economic and demographic, leading to the creation of a *perfect storm* of business model change in all industries (WEF 2016, p. 13). The result turns out to be one of the major disruptions to labour markets, with the emergence of new categories of jobs and, meanwhile, the displacing of others (WEF 2016). Accordingly, these changes translate into the transformation of the way of working and of skills demand, for both new and old occupations. These may be viewed as the effects of the so-called *Digital Transformation* (from now on, DT), a phenomenon that can be briefly defined as «an effort to enable existing business models by integrating advanced technologies» (McKinsey Digital 2019). To provide a clearer overview of this transformation process, we can distinguish three phases, which follow each other in terms of complexity and breadth, as can be seen in Figure 9.

Figure 9 Digitisation, Digitalisation and Digital Transformation



Source: Bumann and Peter (2019).

According to Bumann and Peter (2019, p. 15):

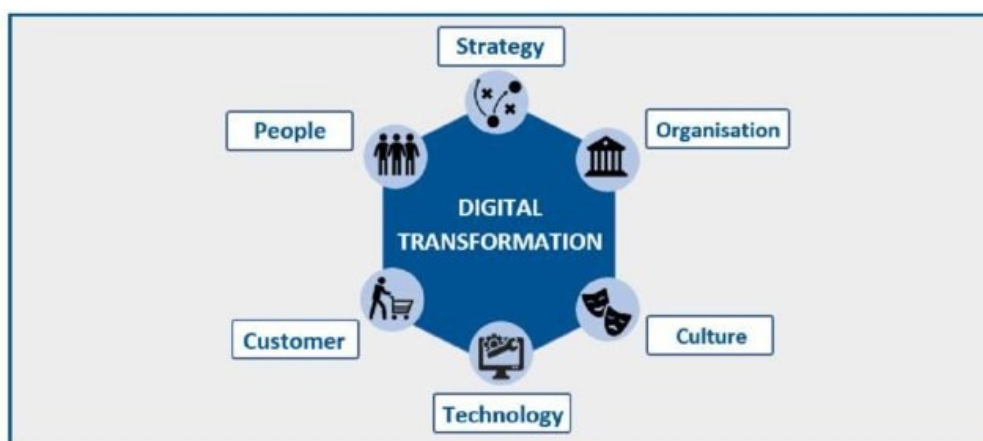
- *Digitisation* is the simple «conversion form analogue to digital».
- *Digitalisation* is «the process of using digital technologies and the impact it has».

- *Digital Transformation* is the broadest process that «encompasses the whole enterprise» and requires a “cross-cutting organizational change».

What emerges is that DT it's not just adding technologies into the normal execution of work, but it implies above all «rethinking organizational structure, leadership, workplace culture and work itself» (Putre 2019, p. 13). Therefore, it is not a simple and quick process, as it translates in critical changes in the company's *DNA* that occurs through stages of digital maturity (Deloitte 2021, p. 3). This is the reason why some companies live in an illusion on being digital, simply by doing digital things (Deloitte 2021).

Recent studies pointed out how in order to succeed in DT, organizations have to consider digital in its fullest extent and «place it at the heart of their business strategies» (Deloitte 2021; Bumann and Peter 2019, p. 16). In other words, being digital is a necessary condition in order to play, but companies need to have the right strategy in order to win (Deloitte Insights 2021). Consequently, DT framework should encompass the entire enterprise and involve six fields of action, shown in Figure 10: business strategy, organization, culture, technology, customer and people (Bumann and Peter 2019).

Figure 10 *Digital Transformation action dimensions*



Source: Bumann, J. and Peter, M. K. (2019).

Indeed, as it is accentuated in the article *The Technology Fallacy: People Are the Real Key to Digital* (Kane 2019), a successful DT involves an overall change in mindset, both at employee, leadership and organizational levels.

The previous considerations may be summarized in the words used by George

Westerman<sup>9</sup> (Harvard Business Review 2020, p. 10):

«Transformation isn't just a project. It's something that must become a part of an organization's being. That means putting a culture in place so that transformation becomes a natural way of working».

What used to be an aspiration for companies, in recent years has become a priority and now it's a question of survival (Accenture 2020, p. 2). In an increasingly digital world and an extremely dynamic and unpredictable economic environment, DT proves to be imperative to remain competitive. Unsurprisingly, companies' plans in this direction were quickly accelerated in response to the global pandemic, revealing how underutilized digital technologies really have been (Deloitte 2021). Indeed, according to the *Worldwide Digital Transformation 2022 Predictions* presented by International Data Corporation<sup>10</sup> in October 2021, investments in DT will accelerate from a Compound Annual Growth Rate (CAGR) of 15.4% in 2019-2024 to 16,5% in 2022-2024. Moreover, it was predicted that more than 50% of the global economy will rely on digital in 2022 and that almost all organizations worldwide (precisely, 90%) will prioritize investments in digital tools by 2023 (International Data Corporation 2021). In this regard, Shawn Fitzgerald, research director of *Worldwide Digital Transformation Strategies*, argued that "for the first time ever, we see that the majority of enterprise organizations (at 53%) have an enterprisewide digital transformation strategy, a 42% increase from just two years ago" (International Data Corporation 2021).

After having provided an overview of what DT is, it's crucial to clarify that what interests us are its implications for the way of working. Interestingly, a study of Deloitte Insights (2019) found that the adoption of technologies makes jobs change and become more digital, multidisciplinary, data and information driven, and – paradoxically - it increases the importance of people and human dimension.

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<sup>9</sup> Senior Lecturer at the MIT Sloan School of Management and a Principal Research Scientist, J-WEL Workforce Learning.

<sup>10</sup> It is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets.

Figure 11 Evolution of jobs



Source: My elaboration based on Deloitte Insights (2019).

According to the study, we are witnessing an evolution from traditional jobs requiring «specified and narrow skill set» and generally performing repeatable tasks (*standard jobs*), to jobs based on a combination of technical and soft skill (*hybrid jobs*), to a further step of jobs that rely heavily on technology and «combine work and responsibilities from multiple traditional jobs», involving a «more complex set of skills domains» (*superjobs*) (Deloitte Insights 2019, p. 32).

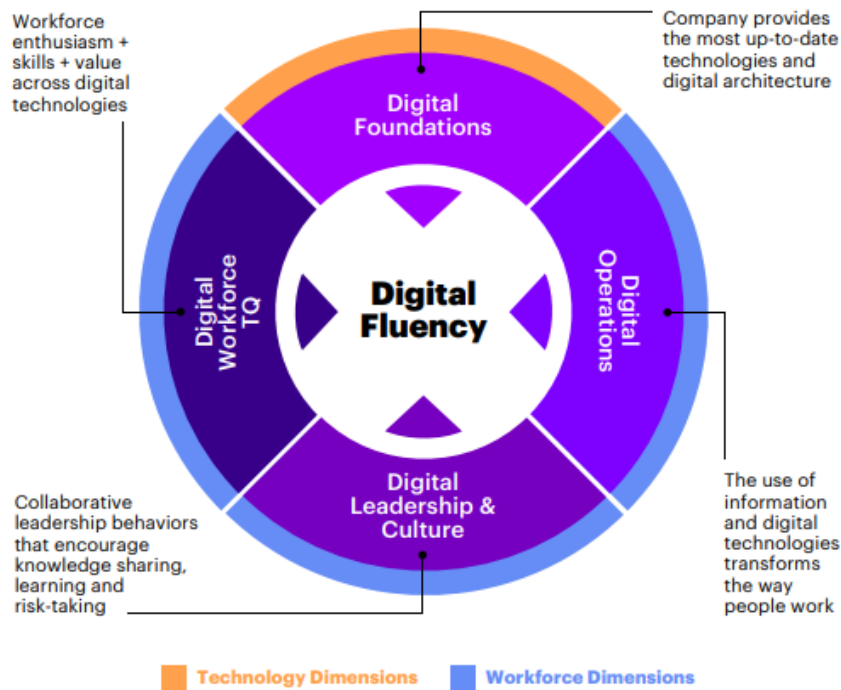
### *Digital fluency*

A recent study of Accenture (2020) highlighted that organizations most digitally fluent can achieve greater results in terms of revenues and returns in customer value, innovation and people experience. It is not enough simply to know how to use technological tools, but what is distinctive are *proficiency and comfort* in using them to realize desired outcomes and strategic goals (Gerard 2016, p. 732).

To make understanding more immediate, digital fluency can be associated with the use of languages: differently from people *literate* in a language, that can understand only the basic tools, people *fluent* in a language are able to use the tools to create something new - for instance writing a poem (Accenture 2020). Likewise, digital fluent organizations go beyond just literacy and use technologies to exploit and manage information, to represent it creatively, to solve problems, to project new ways of working, and so on (Gerard 2016). In other words, «fluency unlocks newfound knowledge, creativity and innovation that literacy cannot enable on its own» (Accenture 2020, p. 7).

It does not come as a surprise that digital natives are associated with high levels of digital fluency, as they have always felt completely familiar in relying heavily on technology (Gerard 2016). However, the digital workforce is represented also by *digital immigrants*, that are adults who have readily adopted technology (Gerard 2016). Shifting the focus on how to measure digital fluidity, Figure 12 shows an integrated framework of its determining factors, which are: company's digital workforce's technology quotient (TQ); digital operations; digital foundations; digital leadership and culture (Accenture 2020).

Figure 12 Digital Fluency Framework



Source: Accenture (2020).

### Impacts and benefits of technology adoption

The implementation of Industry 4.0 technologies leads to organizational redesigns and, more in details, according to the results of 15 case studies carried out by Shaba *et al.* (2019, p. 24):

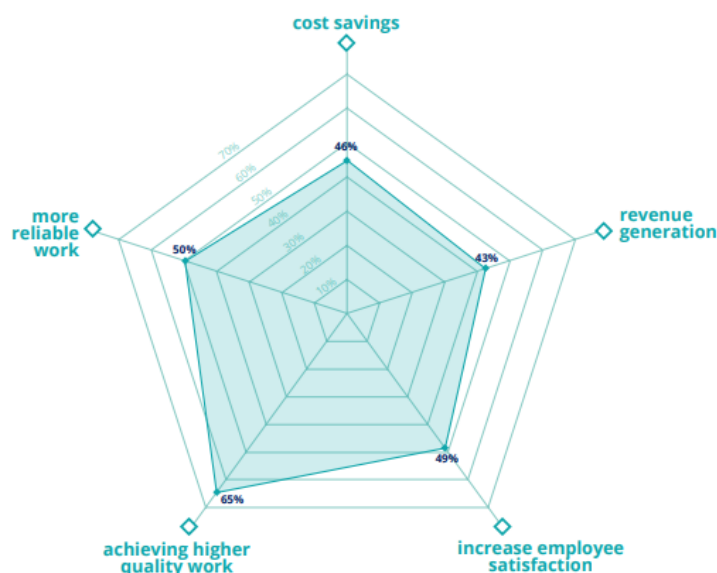
«Industry 4.0 technologies are associated with an increase in cognitive work, decrease in physical demands, more job variety, more collaboration and teamwork, and less hierarchical layers».

Focusing on the job variety, the results of these studies support the emergence of hybrid profiles, showing that workers are required to be more multitasking, as the new technological processes asked them to perform a large variety of activities (Shaba *et al.* 2019). Consequently, the related task enlargement makes jobs more interesting and enjoyable, resulting in an increase in worker satisfaction (Shaba *et al.* 2019).

It is estimated that organizations that do not react to the digital disruption are likely to have a drop in revenue and profits (Bumann and Peter, 2019). Conversely, organizations that apply digital to its full potential, turn into «data-driven, agile, customer-centric, future-proof enterprise, with people empowered and leaders capable to lead teams through volatile markets» (Deloitte 2021, p. 3).

A recent research study (Pegasystems 2020) on the changing role of technology in the workplace, investigated the benefits of adopting technology from an organizational perspective and found the following five key points, shown in Figure 13.

Figure 13 Benefits of technology adoption



Source: Pegasystems (2020).

The greatest benefit – with 65% of the leaders interviewed agree - appears to be the achievement of higher quality work, followed by more reliability (50%). Then, other relevant benefits are the increase in employee satisfaction (49%), cost savings (46%) and revenue generation (43%). Curiously, these implications may be conceived as in line with key features of lean organization (Shaba *et al.* 2019).

Given the many and growing benefits, the adoption of the technology is set to accelerate, and according to Deloitte Insights (2021), the leading reasons that drive companies' digital transformation are the following:

- To be able to innovate faster.
- To modernize and keep up with technological and industry change.
- To empower the resilience capacity.
- To stand up to the competition.
- To comply with changes in the industry.

### 2.3 Artificial Intelligence: a threat for employment?

Focusing on the power of Artificial Intelligence (AI) and automation is one of the *Top 10 Digital Transformation Trends For 2022* published by Forbes. The article emphasizes the recognition by companies of the ability of AI to be faster, more performing, and applicable on a large scale, compared to people, in solving problems (Newman 2021). Before moving on, it is essential to have a clear idea of what artificial intelligence is, and according to Raisch and Krakowski (2021, p. 3) it can be defined as «machines performing cognitive functions usually associated with human minds, such as learning, interacting, and problem solving».

Interestingly, AI is not limited to the working sphere, but it is an omnipresent phenomenon in every area of our life and it is set to become even more part of our daily life. For instance, we can mention Astro Robot, a household robot recently launched by Amazon to monitor the home at any time, or NVIDIA Jarvis, which has taken great steps forward in the conversational AI field (Newman 2021). A further example of how pervasive this phenomenon has become can be seen in the application of AI in the medical sector through IBM Watson Health<sup>11</sup>, which, thanks to the support of machine learning, facilitates data processing and provides professionals in the sector with important information for the diagnosis and treatment plans of patients. This shouldn't be too surprising, as a strong familiarity has developed for years through daily interactions with Alexa, Siri or Google (Newman 2021).

More generally, AI allows to improve results and carry out complex operations that would otherwise take people a lot of time. In other words, the goal of using technologies is to simplify the complex world we are in (Bentivogli 2020). Curiously, we are living in what Brynjolfsson and McAfee (2014) have called *the second machine age*, as the effect that the steam engine has had on «muscle power» is assimilable to what new digital technologies and computers are having on the «mental power» (Brynjolfsson and McAfee 2014). The astonishing technological progress is bringing beneficial transformations, but at the same time it requires to face some *thorny challenges*, as argued in the following words (Brynjolfsson and McAfee 2014):

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<sup>11</sup> <https://www.ibm.com/it-it/watson-health>

«...there's never been a better time to be a worker with special skills or the right education, because these people can use technology to create and capture value. However, there's never been a worse time to be a worker with only 'ordinary' skills and abilities to offer, because computers, robots, and other digital technologies are acquiring these skills and abilities at an extraordinary rate».

What takes shape is a threat and fear of job loss for some workers, as we'll explore more in detail in the next subparagraph.

It's interesting to note how initially companies used to apply AI for automation purpose of routine tasks, but nowadays recent technological advances have extended its use also to managerial tasks (Raisch and Krakowski 2021). According to a recent study (Leyer and Schneider 2021) based on a survey addressed to managers, 50% of them consider the adoption of AI to be an opportunity. Despite the interest and recognition of the benefits of AI in supporting or replacing managers, the findings revealed a different treatment in the delegation of managerial decisions to AI with respect to people. An attitude of resistance and uncertainty about its adoption emerges, accentuated even more by the inability of technology to take responsibility for the results of its decisions, then resulting in a conflicting manager-technology relationship (Leyer and Schneider 2021).

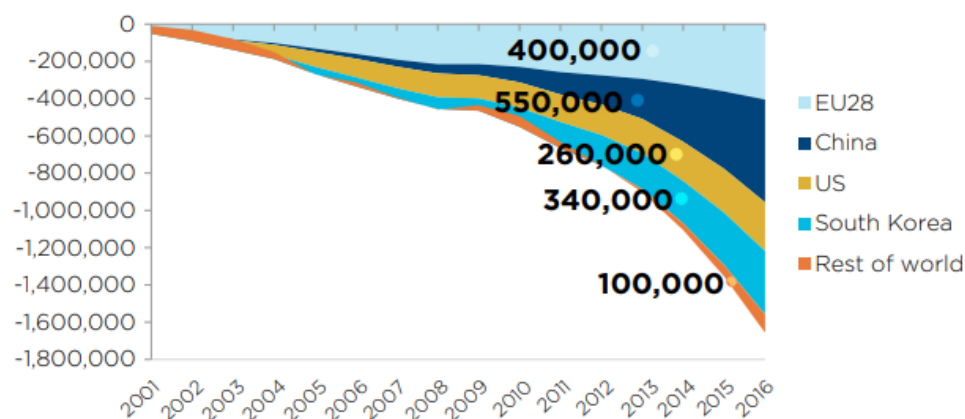
### *Is the threat of replacement alarming?*

«The rise of powerful AI will be either the best or the worst thing ever to happen to humanity. We do not yet know which».

This famous phrase by Stephen Hawking highlights the dual nature of advanced technologies: on the one hand, they accelerate productivity and economic growth, on the other they undermine existing business models and in some cases lead to job losses (Oxford Economics 2019). We may argue that AI gives the idea of something that gets out of hands and can lead to not planned or foreseen outcomes. First of all, the emergence of this phenomenon leads companies to face some impacts from a management point of view – for instance, the management of the interaction between workers and AI, which requires almost inevitably retraining and reskilling programs.

According to Oxford Economics (2019), the rise of robotization has involved profound repercussions on employment worldwide, causing a loss of approximately 1.7 million jobs in the timeframe between 2001 and 2016 and an estimated further 20 million by 2030. The increasing trend over time is represented in Figure 14.

Figure 14 Cumulative jobs losses implied by automation between 2001 and 2016



Source: Oxford Economics (2019).

Continuing in this direction, McKinsey Global Institute (2017) estimated that 49% of the activities carried out by workers could potentially be automated. Another study (Cedefop 2017) raised the task automation rate to 70%, and according to data of the World Economic Forum (2020c), 15% of a company's workforce risks the disruption by 2025. The fear that this might arouse is evident.

However, it's critical to precise that this substitution is «bounded» due to the presence of what Autor (2015, p. 11) called the *Polanyi's paradox*, according to which “we know more than we can tell». Going deeper, some tasks are tacitly understood by people, so they cannot be translated into rules or procedures to be transmitted to machines (Autor 2015). Consequently, these tasks - «demanding flexibility, judgment, and common sense» - are extremely difficult to be automated (Autor 2015, p. 11). These considerations amplify the «comparative advantage» of workers that perform tasks requiring typically human skills, such as creativity, problem solvin, adaptability, social intelligence (Autor 2015, p. 5; Oxford Economics 2019; De Vries *et al.* 2020). In contrast, jobs heavily based on routine and codifiable tasks are those most at risk of being replaced (Autor 2015). Indeed, future forecasts estimate a decrease in physical tasks intensive jobs and an increase in cognitive and social tasks intensive ones (JRC 2019).

Going back to the phenomenon of hybrid jobs, the results of the Joint Reserarch Center (2019) argued that digital technology is not able to replace the more complex job positions, which involve the use of different skills at the same time and which require interacting in environments characterized by high uncertainty and unpredictability. Evidently, this comes in support of the transition phenomenon towards hybrid jobs.

After the previous observations, we may conclude that technology is often and incorrectly seen as a threat, but actually «there's more sense that people crave the technology» (Putre 2019, p. 13). While someone fear the negative impacts of artificial intelligence on work, others, on the contrary, praise its benefits. Indeed, it's interesting to notice that what hurts job is not technology, but most of the times it's the absence of technology (Bentivogli 2020). According to a survey addressed to managers and staff and conducted by Pegasystems (2020), 72% of respondents agreed that intelligent automation<sup>12</sup> reduces stress levels in the workplace and 72% of them states it increases employee satisfaction - as well as consumer satisfaction. Thanks to automation, workers execute less routine and repeatable tasks and this ends up to have a great effect on the quality of jobs (Deloitte Insights 2019; Autor 2015). Curiously, nearly three quarters of surveyed includes both human employees and intelligent machines in the term *workforce*.

Therefore, the topic of replacement should leave room for the topic of occupational shifts by task content, as, according to Cedefop<sup>13</sup> (2017), the greatest effect of technology is precisely transforming the content of jobs, not destroying jobs. It follows that in order not to be left behind, organizations cannot just improve digital literacy, but they need to combine - therefore, to *hybridize* – a wide range of skills, spanning from digital to technical to behavioural fields (Cedefop 2017). In this way, a complementarity between people and technology can be ensured and the World Economic Forum (2018b) supports this coexistenc, estimating a divion of labour rate between humans and machines of 50%. Finally, although it may seem like a paradox, we can argue that technologies are exploitable to their fullest extent only when organizations «focus on finding the human dimension of work» and undertake job redesign in order to achieve it (Deloitte Insights 2019).

### *A Creative Destruction*

Kane (2019) highlighted an important distinction between two concepts that could commonly be seen as interchangeable:

- digital disruption,
- digital transformation.

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<sup>12</sup> Intelligent automation refers to the use of technology to conduct work tasks (Pegasystems 2020).

<sup>13</sup> The European Centre for the Development of Vocational Training.

The former means «the way digital technologies are upending entire industries, changing the rules of business», while the latter refers to «how companies are adapting to the new reality created by digital disruption» (Kane 2019, p. 44). We may interpret the two phenomena as the two sides of what the economist Joseph Schumpeter defined *Creative Destruction*.

On the one hand, the destruction phase manifests itself in the replacement of many tasks through automation, resulting in the job loss for some workers. On the other hand, advanced technologies lead to the creation of new tasks that cannot be done by machines, generating an increase in the labor demand (De Vries *et al.* 2020). It follows a reallocation of tasks between workers and machines. What previously argued can be referred to as the *Reinstatement effect* described by De Vries *et al.* (2020) and that results in the following indirect effects:

- *Price-productivity effect*: whereby automation makes it possible to reduce the prices of produced goods, leading to an increase in sales, that ends in higher labor demand.
- *Scale-productivity effect*: whereby the reduction of prices allows the economy to expand, resulting in a growth in the demand for labor.

In other words, all that is new brings with it a part of the destruction of what is obsolete, and at the same time, it is necessary to destroy the old in order to bring out the new: the technological transformation has created the conditions for the generation of new jobs and, on the other hand, it has led to the elimination of those jobs considered obsolete (Frankiewicz and Chamorro-Premuzic 2020).

What it's pivotal and interesting to precise is that the main actors of the creative part are people, since even the brightest innovation turns out to be irrelevant if people are not well prepared to use it; similarly, the best of human minds lose their usefulness if they don't collaborate with technology (Frankiewicz and Chamorro-Premuzic 2020). To this regard, it was argued that companies can achieve effectiveness only through the combination of technology with the right human skills (Frankiewicz and Chamorro-Premuzic 2020). This is the reason why before investing in technology, they should focus on reskilling and upskilling workers in order to make them sufficiently prepared to take full advantage of the changes (Frankiewicz and Chamorro-Premuzic 2020).

Shifting the attention to the data from the WEF (2020c), it's estimated that 85 million jobs may be lost, while 97 million new jobs may emerge due to the new division of labor

between people and machines. It is evident that the destruction will probably be overcome by the creation and this would seem to reassure us. However, unlike previous years, the pace of job creation is slowing down, while that of job destruction is accelerating (WEF 2020c). This could be perceived a sign of concern and could suggest that workers need more time to achieve the skill set needed.

***Beyond automation: the augmentation strategy***

Contrary to common belief, the rise of advanced technologies may be perceived as (Butera 2020, p. 14):

«the driving force for creating the main weapon against unemployment».

Although the Fourth Industrial Revolution reduced the number of workers required to carry out certain activities, triggering the fear of jobs destruction, it also opened up opportunities to enhance existing jobs with the creation of completely new tasks, thus fostering the businesses growth (WEF 2018b).

From this angle, technology can be seen as a «factor augmenting», that enhance the effectiveness and the value of work, differently from the simple automation which allows to save costs (De Vries *et al.* 2020, p. 2; Butera 2020b). The WEF (2018b) found that companies need to develop an *augmentation strategy* that allows them to use the automation of certain tasks to integrate and improve workers' performances and to create the conditions for broadening their full potential: free from performing routine and repetitive tasks - which are time consuming-, they can make the most of their time. In other words, augmentation results in a close collaboration between humans and machines, that mutually enhances them, increasing their value (Raisch and Krakowski 2021). We may see an application of this in collaborative robots, the so-called *cobots*, which share the workplace and interact with workers.

Consequently, organizations need to redesign work and jobs in new ways in order to achieve significant improvements, going beyond the limited improvements that simple automation leads to (Deloitte Insights 2019). In some cases, redesigning is not enough and recoding is necessary, i.e. a reimagination of work and jobs by integrating advanced technologies (Deloitte Insights 2019). To clarify the breadth of the meaning of *work*, we report the words with which Butera (2020b, p. 14) described it:

«What does work itself mean? Many things, as the set of activities, responsibilities, results, relationships, skills; training and growth paths; rights; physical, psychological, economic and professional working conditions; and, above all, social identities».

A research project (Raisch and Krakowski 2021) recently conducted by two scholars of the University of Geneva, focusing on management area, wondered whether it is better to prioritize automation or augmentation, defined as two broad AI applications in organizations. The main finding of their research, based on a review of three recent business books<sup>14</sup> - in which the benefits of the augmentation strategy are accentuated, while automation is viewed in a more negative key – is the recognition of a curious *automation–augmentation paradox*. According to it, the two concepts are interdependent and cannot be separated. It follows a paradoxical tension that lead to negative outcomes if one of the two is over-emphasized, and it finds solution only in the application of both (Raisch and Krakowski 2021). Another important finding of the research is that «augmentation is both the driver and outcome of automation», making the paradox even more visible (Raisch and Krakowski 2021, p. 25). Therefore, we might infer that it is critical for organizations to focus on both of them.

## 2.4 The Ecological Transition

### 2.4.1 Digitalization as an enable factor

This chapter is dedicated to the interpretation of the transition towards *hybrid jobs* in an emergent key, seen as a consequence of something that was not part of the so-called *intended strategy* of Mintzberg (see paragraph 1.4.1) – so, that was not planned -, but which “emerged” afterwards, contributing to the so-called *realized strategy* (Mintzberg and Waters 1985). Hitherto, we have taken a technology-based perspective - with a particular focus on AI -, and we have seen how this pushes towards hybrid jobs. However, a further factor needs to be added to the discussion: the sustainability component. Unlike hybridization due to technology, hybridization due to sustainability is less intuitive, and now we are going to explore it in more detail.

Undoubtedly, environmental sustainability is an urgent challenge to be faced and it has

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<sup>14</sup>*The Second Machine Age* by Erik Brynjolfsson and Andrew McAfee; *Only Humans Need Apply* by Thomas H. Davenport and Julia Kirby; *Human + Machine* by Paul R. Daugherty and H. James Wilson.

become imperative to accelerate the ecological transition towards sustainable development. In this regard, the ecological transition is one of the missions of the Italian National Recovery and Resilience Plan<sup>15</sup> (NRRP) and it's at the heart of the European Green Deal, which aims to achieve climate neutrality by 2050 – i.e, an economy without greenhouse gas emissions (European Commission s.d.).

In order to reach this goal, the transformation to a circular economy has to be accelerated and it has to take a global perspective (WEF 2021b). In other words, we need to go beyond just initiatives of individual projects and to move towards a global circular economy, that involves digitalization as a critical player (WEF 2021b). Recently, the World Economic Forum (2021b) stated that:

«Without a coherent and inclusive global digitalization effort, we will never be able to achieve climate goals in a timely manner. (...) We need a global digital backbone designed for public good and built as an open software platform».

From these words we can infer that building a «global digital backbone» is crucial to accelerate the global circular economy. The WEF (2021b) specified that this global digital backbone has to be neutral (public good) and it should facilitate the differentiation and competition of digital circular business models, avoiding monopolization (open software platform). Basically, it consists in sharing digital foundation to reduce the time, cost and risk of creating new circular business models, supporting and fostering in this way their benefits and adoption (WEF 2021b). Accordingly, we can conclude that the ecological transition may be boosted through «focused and responsible digitalization» (WEF 2021b).

Shifting the perspective and taking an internal point of view within the organization, we are going to explore why digital transformation can be interpreted as an enable factor of circular economy and, consequently, of ecological transition. First of all, the key word we want to focus on is *efficiency*, as digitalisation potentially enables resources to be used more efficiently and, therefore, to minimize waste (Antikainen, Uusitalo, and Kivikytö-Reponen 2018). Citing the words of Frankiewicz and Chamorro-Premuzic (2020), technology makes it possible «doing more with less». Continuing in this direction, it's pivotal to mention some of the many implications of digitalization in ecological field

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<sup>15</sup> Source: [https://www.governo.it/sites/governo.it/files/PNRR\\_0.pdf](https://www.governo.it/sites/governo.it/files/PNRR_0.pdf).

(Antikainen, Uusitalo, and Kivikytö-Reponen 2018):

- It allows to expand the lifetime of products, by providing accurate information on their conditions and relying on predictive maintenance.
- It monitors, controls, and optimizes performances both of processes and products, collecting useful data, in a more precise way.
- The smart use of technologies enables reducing energy consumption and optimizing logistics routes.
- It facilitates the coordination of resources and information flows, which is crucial in circular economy business model.

Another important point to raise in the discussion is that thanks to digital technologies it is possible to reduce the environmental impact of travel by transferring many activities remotely and carrying them out through technological intermediation - also saving time. The environmental impact of a worker who works from home could be estimated and compared with the environmental impact and the cost that the worker implies when physically moving; most likely the impact will be lower. Therefore, we may argue that technological innovation makes it possible to work in a sustainable way.

This paragraph lead us to conclude that digitalization is an *enabler* of the ecological transition. This means that, since the urgency to move towards a circular economy that allows environmental sustainability is evident, greater digitalisation is needed to accelerate this transition. Therefore, we could deduce that this translates in increasing the demand for profiles who have the right skills to face these strong changes and that go beyond the simple idea of standard and traditional jobs - seen at the beginning of the chapter. Accordingly, we are witnessing a transition towards hybrid jobs, which ask for human, technical, technological and digital skills. In other words, in this context *hybrid jobs* are acquiring greater importance.

#### 2.4.2 Artificial Intelligence to accelerate the transition

Unsurprisingly, past industrial revolutions used to have negative repercussions on the health of the planet due to the pollution caused. The current technological revolution may reverse this trend and lead to sustainable economic growth, by harnessing AI and other advanced technologies for the sustainability of the planet (PwC s.d.).

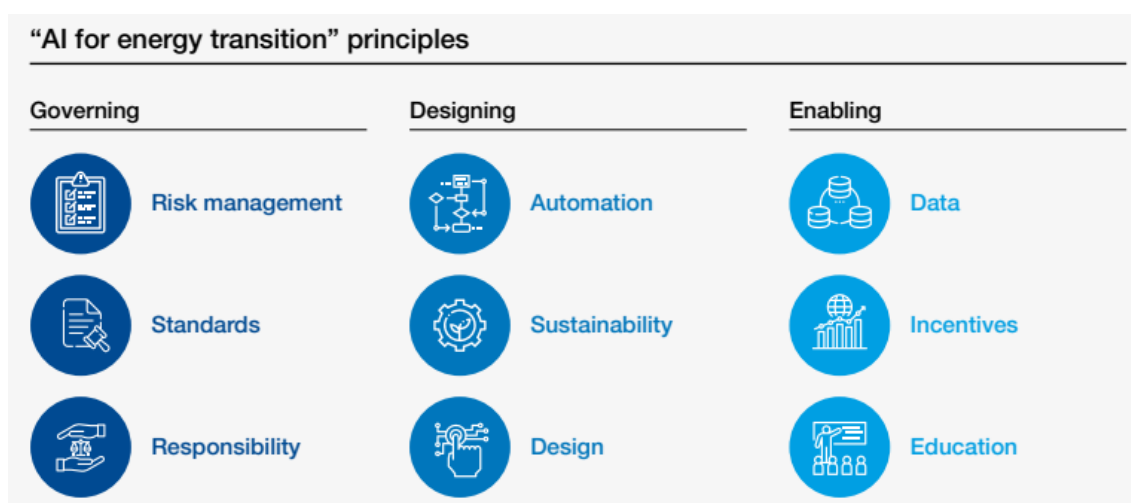
A reserach conducted by PwC and commissioned by Microsoft, entitled *How AI can*

enable a Sustainable Future, has estimated that the application of AI for environmental purpose can lead to a reduction in global greenhouse gas emissions by 4% and to an increase in global GDP of 4.4% by 2030. In doing it, the research examined four sectors affected by the application of AI - energy, transport, water, agriculture - and investigated on its implications. What emerged is that the manifestation of the reduction of emissions is greatest in the energy and transport sectors, which are those that have the greatest environmental impact. According to research's results, AI can accelerate the transition to a low-carbon economy, ending up being seen as a tool for a more sustainable future, in the following ways (PwC s.d.):

- Increasing the efficiency of energy use.
- Reducing the greenhouse gas (GHG) intensity.
- Changing the mix of energy sources, moving to cleaner ones.

Energy transition is essential to achieve the ecological transition and it is at the hearth of a recent study by WEF (2021c), which indagated how to harness AI to support and accelerate the global energy transition. It shows that AI can be a powerful tool to address the complexity involved and to reduce associated costs, allowing in this way to achieve higher efficiency. For this purpose Figure 15 provides nine principles that favor the application of AI, splitted in three areas: governing, designing, and anabling.

Figure 15 The nine "AI for the energy transition" principles



Source: WEF 2021c.

Research demonstrated that moving to a decarbonized global energy system leads to a high decentralization, which results in a high level of interaction between actors and

sectors involved, consequently leading to an integrated system that requires greater coordination and flexibility (WEF 2021c). In this context, digitalization acts as an enabler, facilitating the sharing of information and «linking different sectors into the most reliable, affordable and cleanest system possible» (WEF 2021c, p. 5). Furthermore, according to the same study, energy transition will continue to rely increasingly on digitalization as a crucial driver for achieving climate goals. This comes in support of what was discussed in the previous paragraph.

However, we should keep an open and questioning mind in exploring this field and not overlook the flipside of the coin. Although on the one hand AI application allows to reach significant improvements, on the other, despite the best of intentions, negative effects could occur (WEF 2021a). Evidence from a recent study (PwC s.d.) has shown that the use of AI leads to an optimization of efficiency, resulting in lower costs and favoring an expansion of production (*Rebound effect*). In turn, production expansion leads to higher profits and income for companies and workers, implying an enlargement in the demand for goods, that entails an increase in economic activity and, consequently, in greenhouse gas emissions (*Income effect*).

Therefore, as the WEF (2021a) noted, AI is an extremely powerful tool, but it must be wisely managed to minimize the risks involved. For supporting environmental purposes, it's pivotal to put the accent on a care, responsible and safe way of using AI (WEF 2021a).

## **2.5 How are *hybrid jobs* measured?**

### **2.5.1 The Hybridization Wheel**

After having discussed the transition to hybrid jobs, we want to shift the focus to measuring hybridization and we are going to explore two different models. The first one is based on two dimensions: the *intensity of hybridization* and the *type of effort*.

The *intensity of hybridization* refers to the extent of the phenomenon and it's based on two components (Gubitta, Baraldini and Fano 2020):

- The frequency with which a worker is asked to carry out activities that require the use of a wide range of skills - from IT, to digital, to relational ones.
- The level of knowledge to adequately perform the required tasks.

These two components can occur in different combinations, going from one extreme

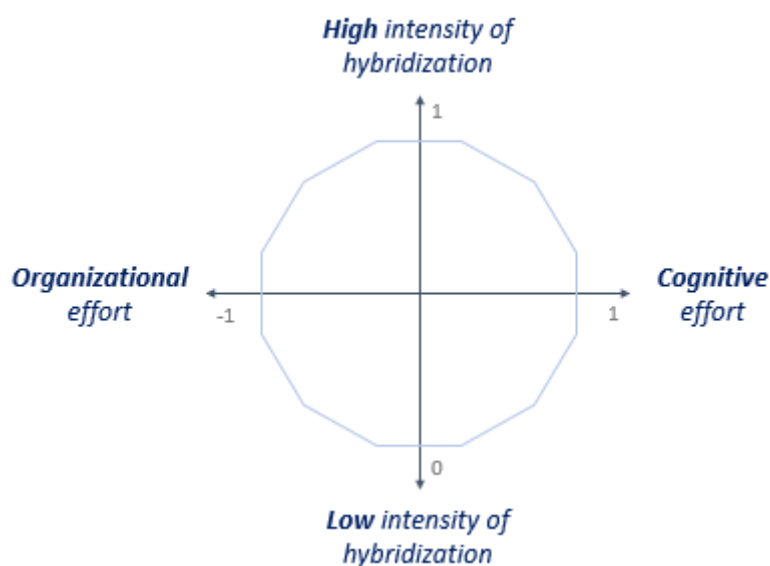
characterized by high frequency and high level of knowledge, to the other one characterized by low levels for both (Gubitta, Baraldini and Fano 2020). The greater the value attributed to them, the greater the intensity of hybridization (Gubitta, Baraldini and Fano 2020).

The second dimension of the model is the *type of effort* (Gubitta, Baraldini and Fano 2020):

- *Organizational effort* occurs when a worker is required to perform an activity by alternating different execution methods. For instance, let's think of a worker who switches from a manual to a digital machine: the higher the frequency, the higher the effort.
- *Cognitive effort* occurs when a worker is required to change the level of knowledge and skills to carry out the activity correctly. An example may be a surgeon who goes from operating with a bistoury to using a joystick to control a robot.

Figure 16 illustrates the *Hybridization Wheel* and how its dimensions – whose combination determines the *hybridization index* - are interrelated.

Figure 16 The hybridization wheel



Source: my elaboratin based on Gubitta, Baraldini and Fano (2020).

Interestinlgy, situations with low intensity of hybridization are the simplest to manage and they usually present organizational and cognitive effort tending towards zero (Gubitta, Baraldini and Fano 2020). The same occurs when the intensity is very high - both in terms of frequency and level of knowledge -, therefore hybridization becomes a

permanent component of the activity and, consequently, organizational and cognitive effort become part of the activity nature (Gubitta, Baraldini and Fano 2020). On the contrary, situations with a midway intensity of hybridization are the most critical, since they require high organizational or cognitive effort to cope with the discontinuity (Gubitta, Baraldini and Fano 2020).

### 2.5.2 The Clepsydra Model

Hybridization process may be viewed as an «asymmetrical phenomenon, as it is not distributed uniformly in all segments of the labor market» (Gubitta, Baraldini and Fano 2020, p. 125). It was observed that some business areas are more susceptible to hybridization than others, and even in the same area different levels of hybridization are experienced (Gubitta, Baraldini and Fano 2020). Accordingly, the hybridization process does not involve all jobs in the same way, but in some it expands, while in others it contracts. Going deeper, the *expansion* manifests itself through skills enlargement, which consists in an expansion of the skills required to perform the job, resulting in the upskilling or reskilling of workers. Conversely, the *contraction* manifests itself through skills reduction, which consists in lowering the level of skills, leading to the deskilling of workers. In some cases, we can witness in the same job the coexistence of a contraction and an expansion.

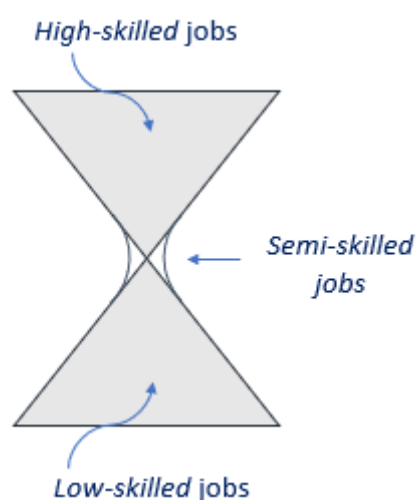
In the previous paragraphs, we have seen how technology leads to job creation and destruction. Continuing on the same direction, Frey and Osborne (2017, p. 256) defined technologies «largely deskilling», as they simplify complex activities and substitute humans in repetitive tasks through automation.

Consequently, the progressive hybridization leads some professions to make a *downgrade*, resulting in a reduction of the necessary skills, since the role of the person becomes that of support and control of machines. This means that it may no longer be necessary to have a higher qualification, but a lower qualification is sufficient to be able to carry out the work. On the other hand, conversely, some jobs - not susceptible to automation - experience an *upgrade*. In this context, a polarization of the labor market emerges «between those who know and those who do not know» (Gubitta 2020, p. 228), i.e. between high-skilled jobs and low-skilled jobs, and there is a decrease in semi-skilled jobs.

Putting the two movements together, we are faced with a polarization that from a graphic

point of view - by analogy with the wheel - is equivalent to a *clepsydra*, which gives rise to the homonymous model, illustrated in Figure 17.

Figure 17 The *clepsydra* model



Source: my research.

In addition to this, a second polarization could be recognized in the labor market, «between those who have a whole working life ahead of them and those who are (nearly) at the end of their career» (Gubitta 2020, p. 229). In this regards, assuming a perspective that sees technologies as *competence enhancing*, professional experience turns out to increase the value of a worker, giving him a competitive advantage (Gubitta 2020). However, assuming a perspective that sees technologies as *competence destroying*, working maturity turns out to be a strong obstacle, because it imposes not only the effort to learn new things, but also that of unlearning what previously learned (Gubitta 2020). According to this view, the labour market may present a pole characterized by individuals early in their careers - in which it is worthwhile to invest, because the return for companies will be greater - and a pole characterized by matured workers - on which the investment can be harder due to the double effort involved.

## 2.6 Conclusion

The amazing evolution of new digital technologies means that the hybridization of work follows paths that are not always deliberate, but also emerging. We have seen how the transition to hybrid jobs, explored in a deliberate key in the previous chapter – i.e., as a consequence of companies that increasingly ask for digital, IT and relational skills - can

also be read in an emerging key – i.e., as a result of something that was not planned or intended. For instance, artificial intelligence, which has been making great strides in recent years, gives the idea of something not planned or foreseen, something that *gets out of hands*, leading to unpredictable scenarios. From this perspective, progress forward could in some ways reduce (deskilling) and in others expand (upskilling or reskilling) workers' skills portfolio, consequently leading to require skills that were not expected. Therefore, jobs tend to take an increasingly *hybrid* nature.

This hybridization of work process may be defined unstoppable. In this chapter we showed as it is driven by both digital transformation and ecological transition. The connection with the first component is much simpler and more direct, since digital innovation - leading to the disappearance of some jobs, considered obsolete, and to the creation of new ones through upskilling and reskilling (this may be interpreted as what we called a *creative destruction*) - emphasizes the digital skills that people are required to have in order to be valued in an increasingly technologically advanced world. The second component, conversely, may appear less intuitive, since the connection lies in the role of digitalization as an enabling factor of the ecological transition: the urgency to move towards a circular economy, that allows environmental sustainability, accelerates the demand for profiles who have the right skills to face these strong changes, consequently increasing the importance of hybrid jobs.

Eventually, we conclude the discussion with the presentation of two models to measure the hybridization of work. The first one is the *hybridization wheel*, based on intensity of hybridization (high or low) and the type of effort (organizational or cognitive). The second one is the *clepsydra model*, which, taking a step forward, illustrates the double polarization of the labour market, whereby some jobs have downgraded and others have upgraded.

Interestingly, the pandemic, as totally unexpected and unforeseen phenomenon, can be interpreted as an emergent factor that helped and accelerated the transition towards hybrid jobs, through the use of smart working. This, in addition to being linked to a growing adoption of technological tools and having made evident the need to develop technological skills, is also consistent with the ecological transition. All these pressures impacting on work bring out a new theme: the management of workspace. Accordingly, the change in the way the work is carried out requires a redesign of the spaces, both

organizational and domestic ones. In the next chapter we will discuss how to redesign and reinvent the workspace.



## WHY THE ORGANIZATION OF WORKSPACE MATTERS

### 3.1 Introduction

What has been discussed up to this point is further enhanced by a very recent phenomenon concerning mass resignations, identified by Anthony Klotz with the terms *The Great Resignation*. An interesting research conducted in September by McKinsey & Company (2021) revealed that approximately 40% of employees plans to quit in the next 3-6 months and that more than a third of those who quit their jobs in the past months did not have an alternative occupation.

One might wrongly think that this phenomenon is due to people's unwillingness to work. In some and limited cases it could also be true, but the reality is much more complex and articulated. As we will see, there are many potential and hypothetical reasons behind these behaviors and they are closely linked to the perspective from which the phenomenon is observed. Our proposal takes and focuses on one possible interpretation - the workspace design -, according to which mass resignations reveal that people's attitudes to ways of working and the lifestyle in general have profoundly changed, bringing to light new needs. In this chapter we will delve into this theme. The processes and transitions presented in previous chapters are grafted within the organizations and demand a different way, on the one hand of organizing work, on the other of structuring workplaces.

Interestingly, the work-environment and the workspace are becoming key for the hybridization of work. Therefore, having spaces that take into account the impact of digital transformation and ecological transition becomes relevant. In other words, the work is constantly changing and this affects the transformation of workspaces. In this context, digital transformation offers a wide range of tools to deal with space

management. In addition to this, work-environment and work-space management become a component of performance management.

This chapter is organized as follows. Paragraph 3.2. will provide an overview of what is happening in people's career management, investigating the reasons behind the Great Resignation and discussing how to turn this phenomenon from being a great attrition into a great attraction. In paragraph 3.3 the attention will shift on the reinvention of workspaces and we will explain in which sense spaces need to be reimagined. Then, the hybrid work model emergence - following the wide success achieved by remote work - and the new configuration of the – *hybrid* – office will be presented. In the end, paragraph 3.4 will introduce the topic of virtual reality and its application in the workspace sphere, focusing on its implications and assuming different points of view.

### **3.2 Career management: what's new?**

The year 2020, marked by the rapid spread of the pandemic, has definitely changed the work and people's attitudes to the job market (Microsoft 2021). Although in August 2021 the economic indicators appeared to be positive and to suggest an apparently good situation, one relevant element was missing: the will of workers to do what the job required (Hirsch 2021). Indeed, 2021 was marked by an ever-increasing number of workers who voluntarily leave their jobs, resulting in the detection of a high quit rate<sup>16</sup> of jobs. What is worrying is that many of them quit without having an alternative: according to research led by McKisey & Company (2021) and based on around 6.000 people, more than a third (36%) of those who quit their jobs in the past six months did not have a new job on their hands. This feature makes the phenomenon in question different from previous downturn-and-recovery cycles (McKinsey & Company 2021).

The trend began to take hold in the US starting in April 2021, when 3.9 million of workers quitting their jobs were registered, ending up reaching the highest record in September with 4.3 million (Casselmann 2021). Then it spread rapidly around the world and it became fully visible also in Italy, where the Ministry of Labor announced that 484.000 voluntary resignations were recorded in the second quarter of 2021 out of a total of 2.5 million work interruptions – an increase of 85% compared to 2020 and 10% compared to 2019

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<sup>16</sup> Quit rate refers to the number of resignations out of the total number of employees.

(Armillei 2021). The quit rate in Italy went from 1.59 in the first three months of 2021 to reach a value of 2.12, and it is estimated to grow (Armillei 2021).

This phenomenon has been identified as *The Great Resignation*, a term coined by Anthony Klotz<sup>17</sup>, who predicted a wave of resignations in response to the post lockdown return to normal, accompanied by the perception by many people of a desire for change (WEF 2021d). Based on a study of more than 30.000 people in 31 countries, *Microsoft 2021 Work Trend Index* showed that 41% of global workers consider to quit their jobs during the year; the value rises to 54% considering only Gen Z. Another interesting finding of the same study is that 46% of respondents intend to realize a «major pivot or career transition» (Microsoft 2021, p. 22).

These results are confirmed by the huge number of studies conducted on this topic. Among them, the *Bankrate*<sup>18</sup>'s *August 2021 Job Seeker Survey* found that more than half of American workforce is going to look for a new job within the next year. A recent analysis by Gallup, a global analytics and advice firm, takes the same line, revealing that – in the presence of a high quit rate – 48% of the working American population is looking for a job opportunity (Gandhi and Robison 2021). In this regard, McKinsey & Company (2021) pointed out that 40% of employees interviewed plans to quit in the short term – i.e., in the next 3-6 months. Accordingly, the Great Resignation may be interpreted as the *Great Discontent*, that drives workers to revalue and boost their careers (Gandhi and Robison 2021).

It is straightforward that the world of work emerges from the pandemic profoundly changed. In an article recently published in *Corriere della Sera*, the journalist Fubini (2021), focusing on Italian situation, emphasized what appears to be a great *contradiction*. Paradoxically, the current number of people employed is lower than before the outbreak of the pandemic - and therefore, we can assume that more people are looking for a job - but companies are struggling to fill vacancies, while the number of people quitting has reached a record high (Fubini 2021). On the one hand, this may be due to companies experiencing skills shortages in workers; on the other one, some people are reviewing their work-life balance and priorities (Fubini 2021). According to Fubini (2021), we are in the midst of a «colossal readjustment» after an earthquake that is not only healthcare,

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<sup>17</sup> Professor of Management at Texas A&M University.

<sup>18</sup> Bankrate is a consumer financial services company based in New York City.

but also economic and social.

### *Different reasons behind the Great Resignation*

We might wonder if what previously discussed is a consequence of a temporary effect of the pandemic or the result of the signs of a new job market (Armillei 2021). Given the topicality of the phenomenon - still ongoing - and insufficient research to allow definitive conclusions to be drawn, we can limit only to the elaboration of hypothesis, based on the results collected in several researches and surveys.

A first explanation of such a large number of people quitting was provided by Anthony Klotz, who stated that (Cohen 2021):

«When there's uncertainty, people tend to stay put, so there are pent-up resignations that didn't happen over the past year».

Therefore, behind the Great Resignation there may be resignations already scheduled, but that people have postponed due to the uncertainty of the pandemic, and now they have multiplied (Cohen 2021; Armillei 2021). Several and various opinions emerged: some argue that workers may have been incentivized by the generous benefits the government granted during the lockdown, discouraging re-entry into the world of work; others pointed out that the cause lies in the numerous obstacles to returning to work, such as health, transport and childcare issues; still others believe that the cause may be of a remunerative nature (WEF 2021d; Hirsch 2021).

Interestingly, an article published in *Harvard Business Review*, based on an analysis involving more than 9 million employees worldwide, revealed that resignation phenomenon particularly affected *mid-career* people – between 30 and 45 years old. This may be surprising, as turnover is usually higher among young people, who have, conversely, been penalized in this situation (Cook 2021). It finds confirmation in Microsoft study (2021, p. 12), which demonstrated that «Gen Z is struggling more than other generations due to the pandemic». Probably, the adoption of the remote working model has prompted employers to focus mainly on more experienced profiles in order to avoid the risk of not being able to provide entry-level with adequate training in presence (Cook 2021). As a result, the demand for mid-career employees increased, consequently giving them more choice opportunities (Cook 2021).

In order to provide an overview as complete as possible, various points of view are taken

into consideration. According to some studies (Hirsch 2021, p. 440; Cook 2021), resignation might depend on the economic sector and data suggest that hospitality, technology, travel and tourism ones have been the most concerned: these segments turn out to be «most affected by the stresses of the pandemic» or to present high shortage of workforce that encourages and enable «those in jobs to move elsewhere», seeking for better conditions. Conversely, other points of view argue that it's not an industry – neither a role or pay – issue, but «it's a workplace issue» (Gandhi and Robison 2021).

Going deeper, Visier<sup>19</sup> (2021) - the market leader in workforce analytics - identified six specific reasons why employees quit their jobs:

- They are looking for *work hour flexibility*.
- They are *burned out* due to the stress, anxiety, and uncertainty, that marked the last period.
- They do not feel a *sense of belonging* to organizational culture.
- They want to work *remotely*.
- A clear *path forward* is missing.
- They crave to do *meaningful* work and to create meaningful interactions (McKinsey & Company 2021).

So far, profoundly different views on the underlying rationale for leaving jobs have emerged. It's evident that the pandemic made many workers aware of the *trade-offs* they had been making in their career path, leading them to re-examine their employment and seek a job more in line with their needs and aspirations (Hirsch 2021; Cohen 2021). Klotz refers to this phenomenon with «pandemic-related epiphanies» (Cohen 2021).

### ***Career reshuffle: from attrition to attraction***

«Pandemic-inspired changes, including the ability to work remotely and/or from home, have transformed mindsets and expectations for many workers.»

From these words, that appeared in a recent study conducted by Bankrate (2021), it emerged that the pandemic is leading many workers to re-evaluate their careers. Probably, people have been questioning and rethinking their priorities, changing irrevocably their expectations from work, and reshaping the role of work in their lives and the overall work-

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<sup>19</sup> Visier is a cloud-based analytics application that provides quick and clear people insights.

life balance (McKinsey & Company 2021).

An article published by *BBC* in December 2021 gave an entirely new and more dynamic interpretation to the *Great Resignation*, depicting it as a «Great Reshuffle» that manifests itself in employees moving within the labor market and «reconfiguring their careers»; consequently, labour market appears *unsettled* due to these people shifts (Christian 2021). We may wonder if this movement is a simple and temporary effect of the lockdown, due to a period of adjustments, or if it turns out to be a permanent phenomenon that results in a «reallocation of the workforce» with potential long-term implications (Christian 2021; Armillei 2021). It is undoubtedly premature to give an answer, however Klotz hopes that the pandemic could «led to a permanent improvement in the world of work» (Christian 2021). Hirsch (2021, p. 441) also takes the same side, estimating that the Great Resignation would generate «progress in the fundamentals of work».

Another interesting interpretation, offered by McKinsey & Company (2021), suggested that the Great Resignation – viewed as a *Great Attrition* - might represent a big opportunity and turn into what was identified as a *Great Attraction*. Accordingly, companies that recognize the importance of understanding the rationale behind people leaving and do their best to prevent it, could gain an advantage in retaining, developing and attracting talent (McKinsey & Company 2021). In other words, they find a way to turn what appeared to be an attrition into an attraction.

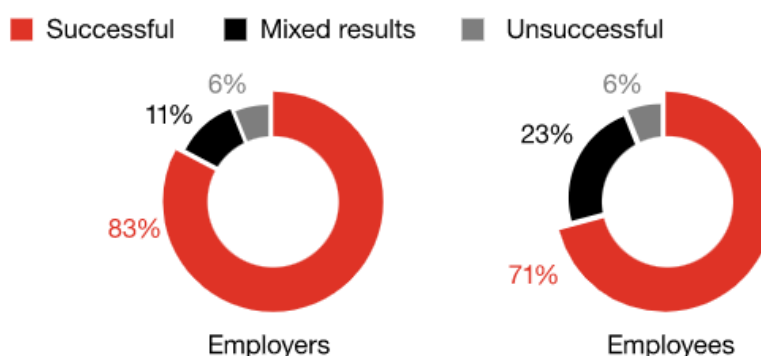
After having analyzed, by assuming different points of view, the possible reasons that led workers to resign, our proposal takes one possible interpretation - focusing on workspace design - and now we are going to explore it.

### **3.3 Reinventing the workspace. Physical and virtual dimensions**

#### **3.3.1 The emergence of Hybrid Work Model**

During the pandemic, ways of working other than those requiring physical presence in the office were tested; they were certainly *not new* modalities, but they had not been applied on such a large scale before. Although it was a forced adoption due to the limitations of the lockdown and it took place in a very short period of time, it turned out to be a huge success. *US Remote Work Survey* by PwC (2021) revealed that only 6% of interviewed employers and employees found it unsuccessful; the precise results are shown in Figure 18.

Figure 18 Opinions on the success of remote work



Source: PwC (2021).

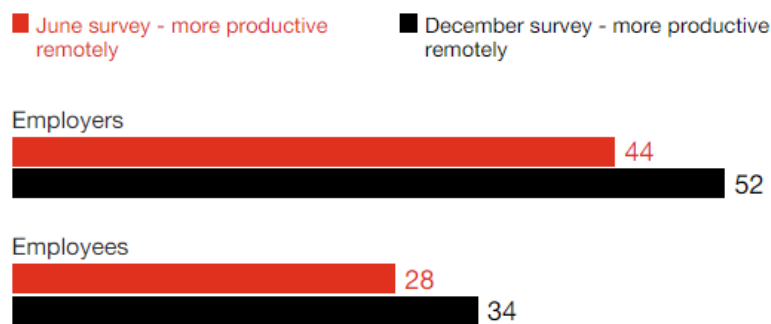
The amount of studies on the subject is very large. According to McKinsey & Company (2021) survey, 80% of respondents «enjoy working from home», 41% claims to have been more productive and 28% to have been productive as usual. Another survey conducted by Bankrate (2021) highlighted how flexibility is considered important for 56% of American workers interviewed: the result is even more striking considering that flexibility was considered more relevant than a higher pay, which reached a consensus of 53%. Going deeper, Microsoft research (2021) found that 73% of employees desire to continue to have the flexible remote work options, consequently opening to profound reflections. The critical situation described in paragraph 3.2 could be partially resolved through «a thoughtful approach to hybrid work», that could attract and retain people (Microsoft 2021, p. 22). These considerations are further enhanced by the results of a recent survey by Beamery, according to which more than one in three workers stated that their work-life balance improved during the pandemic (WEF 2021d).

It is necessary to recognize that in the last two years the way of working has changed profoundly and that people's expectations have changed accordingly. The «*yesterday, forward*» approach, which consists in organizations returning to their old ways of working – i.e., on-site work that characterized the pre-Covid period – should leave room for «*tomorrow, backward*» philosophy, which consists in taking advantage of lessons learned from the past (BCG 2020). In other words, organizations should not aspire to a return to the past, marked by a re-application of «ways of working that were becoming outdated and obsolete even before the pandemic» (Kane *et al.* 2021, p. 12). Conversely, they should move on, overcoming the patterns of the past and reimagining the work.

Furthermore, it should not be overlooked that the transition to remote work took place in

a very short time and in the absence of preparation: as it was a completely unpredictable event, there was not adequate training and sufficient time to learn what is needed to be able to deal with it in the best possible way. We might be led to think that with the right support, the results would have been even more successful. The data from PwC (2021) seem to confirm this hypothesis, revealing that productivity increased with lengthening of the period of work from home – see Figure 19.

Figure 19 Productivity improvement: June vs. December 2020



Source: PwC (2021).

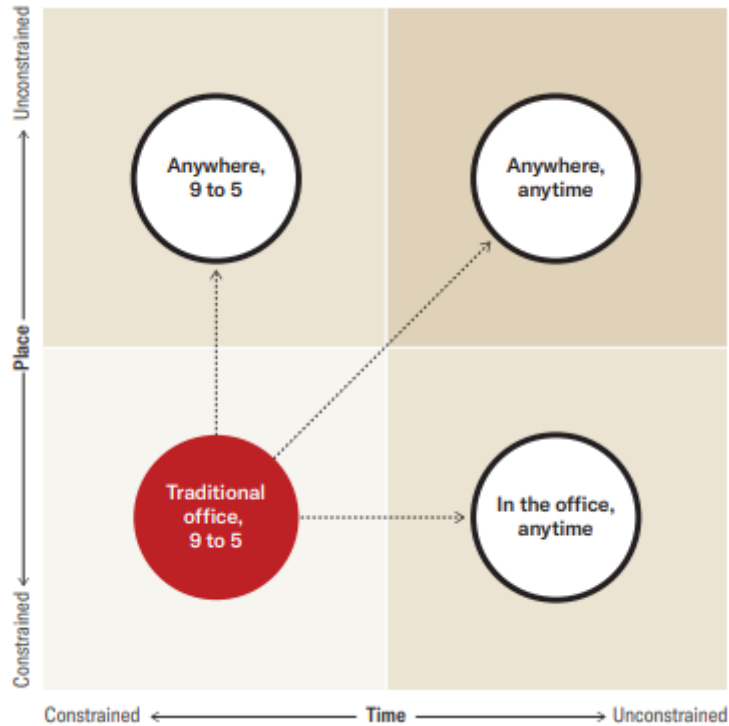
Accordingly, what organizations are experiencing is a unique moment which could be turned out in a great opportunity. In this regards, Microsoft (2021) suggests that companies should «create a plan to empower people for extreme flexibility» and to «invest in space and technology to bridge the physical and digital worlds». Many of them are already moving towards the so-called *new normality*, characterized by flexible options (WEF 2021d).

### Place and Time

*How to Do Hybrid Right* is the title of a recent article published in Harvard Business Review (Gratton 2021), which advises organizations how to properly design a hybrid work model. It emphasizes the importance of considering two dimensions - place and time - leading to a 2x2 matrix, illustrated in Figure 20. Accordingly, place and times can assume two different configurations along the axes: *constrained* or *unconstrained*. Focusing briefly on the evolution of working model in the last few years, the lower-left quadrant may represent the initial point. Before Covid-19, work was closely linked to a *9 to 5 office*, with a very minimal level of flexibility in terms of time and place (Gratton 2021). Only a limited number of companies had started to experiment with hourly flexibility - moving towards the right quadrant - or with place flexibility - moving towards

the upper quadrant; even fewer companies had begun to explore both, positioning themselves in the upper right quadrant (Gratton 2021). We could see the pandemic as a reversal point that revealed how productive workers can be by working anywhere and anytime, and how meaningful flexible working arrangements can be for employee satisfaction (Gratton 2021).

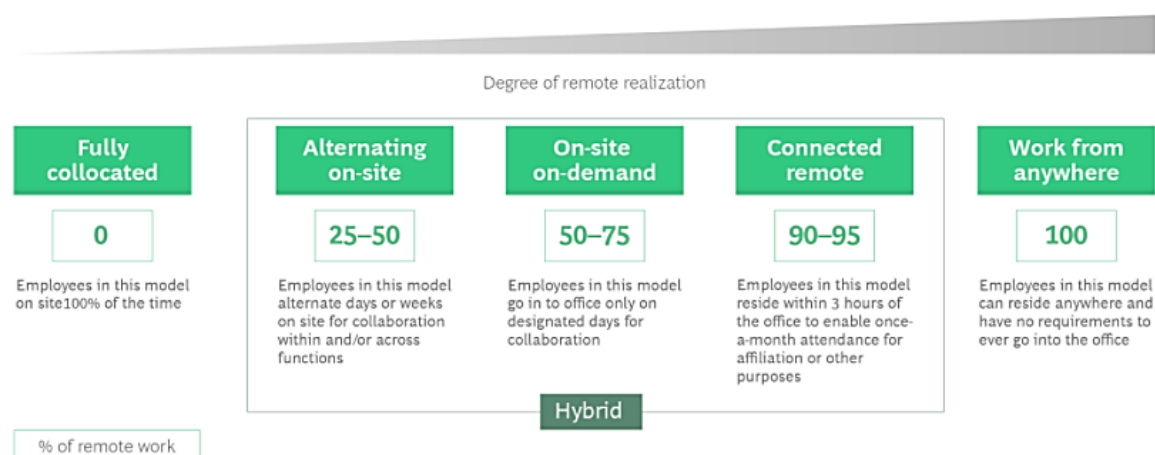
Figure 20 The two dimensions of hybrid work: Place & Time



Source: Gratton (2021).

Combining place and time dimensions in different ways, with particular focus on the first one, we end up with multiple versions of hybrid model, characterized by various degree of remote realization (BCG 2020). They go from a *fully collocated* model, with 0% of remote work, to *work from anywhere*, with 100% of remote work; see Figure 21.

Figure 21 Multiple hybrid models - percentage of remote work



Source: BCG (2020).

We might wonder how organizations should choose the most appropriate model. Boston Consulting Group (2020) advises companies to apply a *job-by-job or function-by-function* approach, as a solution that works well in one case – for a certain job or a certain function – may not give the same result in others. Therefore, it is necessary to «map jobs and functions to various models of remote work» and determine which is the best solution (BCG 2020). In doing it, it was highlighted how fundamental it is to dwell on the key factors of productivity of work and activities, which could be strongly affected by the applied method, because they have different needs for collocation – basing, for instance, on interaction need and/or in-office equipment need (Gratton 2021; BCG 2020).

Shifting attention to another point, considerable advantages have been recognized to the remote working model – and consequently transferable to the hybrid one. They can be summarized as follows (Ancillo et al. 2021; BCG 2020):

- Increase in productivity and improvement in time management.
- Better family-work balance, consequently increasing employee welfare.
- Reduction in real estate and resources usage costs (the estimate is 20%).
- Reduction in turnover (the estimate is 10-15%) and absenteeism (the estimate is 40%).
- Reduction in travel times – with a consequent lower environmental impact.
- Possibility to enlarge the talent marketplace, as «talent is everywhere» (Microsoft 2021, p. 19).

Despite the numerous benefits, there are also some fragile points to consider and pay attention to. According to Kane *et al.* (2021), innovation could be compromised by

distance, starting new projects may be more complicated, organizational culture may be difficult to feed, and mentoring and coaching offered to employees may turn out to be weaker than on-site. What has emerged so far is that it's pivotal to stress on human dimension, and in the following paragraphs we will see how to deal with it.

### 3.3.2 A new organization of workspace

A study by Microsoft (2021, p.4) made it clear that «flexible work is here to stay» and underlined how the future of workplaces will be characterized by hybrid work. An interesting finding accentuated in the same study is that a large amount of business leaders (66%) is oriented to redesign the spaces of the working environments to better manage the new working model and to meet the needs of workers - which, of course, have changed accordingly. Therefore, what we should expect is a substantial change both in the workplace, workforce and work itself (Kane et al. 2021).

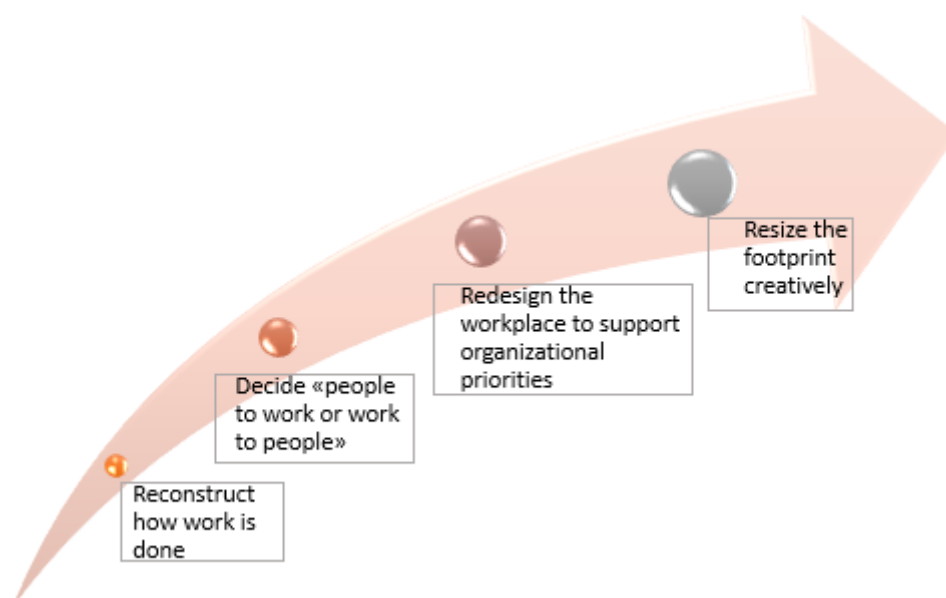
It's clear from the first chapter that work is continuously evolving, consequently impacting on the organization of workplace, which is the location where people go to work, and then on the organization of workspace, which can be considered as a subset of the workplace— precisely, it's the specific space where people perform their tasks. Interestingly, over the years the office design has evolved a lot and now it is moving more and more to offer greater flexibility, in terms of environments in which to work (AESC 2019). For instance, the *activity-based working* allows employees to choose between different alternatives the workspace most suitable for the work they are doing on a given day, the *co-working* is based on sharing the workspace with different people, the *hot desks* and *hoteling* eliminate the concept of assigned desks, allowing people to work where they want in the office (AESC 2019). A curious example of innovative workspace design is offered by Steelcase – a U.S. leading manufacturer of furniture for offices - that has been projecting an office for *on-the-fly adaptation*, that allows to change configuration at the moment to better adapt to the activity to be carried out (Kane et al. 2021).

Many argue that it is essential for organizations to abandon the traditional office vision and reinvent the workspace and the way we understand spaces: work in general will not be as expected before the pandemic (WEF 2020b; Ancillo et al. 2021). According to WEF (2020b), «we need to evolve the dated mindset that being in an office full-time is an actual business imperative». The common opinion according to which productivity required physical presence in the office has therefore been overcome, thus leading to the attribution

of a different role to the office itself (McKinsey & Company 2020).

Research argues that companies that prioritize workspace management strategies will overcome those that disregard it (WEF 2020b). It is pivotal to specify that a «one-size-fits-all solution» does not exist, but it must be built on companies and it must be customized based on the skills of the people and the tasks to be performed, on the level of collaboration required and many other factors (McKinsey & Company 2020, p. 3). A study conducted by McKinsey & Company (2020) entitled *Reimagining the office and work life after COVID-19*, led to the identification of four steps recommended for the success of workplace reinvention (Figure 22).

Figure 22 Four steps for workplace reinvention



Source: my elaboration based on McKinsey & Company (2020).

The first one consists in a complete review of processes and practices and in an overall reconstruction of how work is done. Some companies may be tempted to replicate operating models in place before the pandemic, but they should change direction by reimagining them to make the most of both remote and on-site work.

The next step is to decide between «people to work or work to people», meaning which jobs need to be performed on site, which remotely, and to what extent (p.4). They suggested classifying employees into different segments based on the value that remote working creates:

- *Fully remote*, with a net positive outcome;

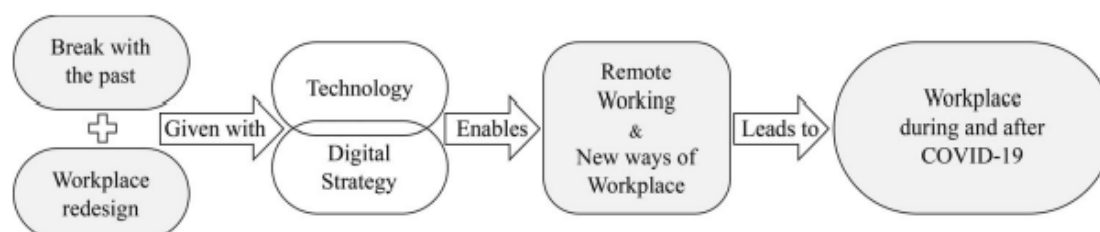
- *Hybrid remote*, with a net neutral outcome;
- *Hybrid remote by exception*, with a net negative outcome, but if necessary the job can be carried out at distance;
- *On site*, with impossibility to perform the job remotely.

The third step consists in the redesign of the workplace in order to better support the new organization of work. It is essential not to remain anchored to the traditional idea of *typical office* seen as «a mixture of private offices and cubicles, with meeting rooms, pantries, and shared amenities», but it should be totally rethought and transformed (p. 4). Under the new configuration of working model, technology is set to play a major role. More deeply, the boundaries between physical and virtual dimensions must be minimized to guarantee the same level of productivity, collaboration, and corporate culture. Furthermore, organizations «could create workspaces specifically designed to support the kinds of interactions that cannot happen remotely» (p.4). We will further explore this last point afterwards.

The last step is about the resizing of the footprint, by reconsidering the spaces both in terms of quantity and place to favor the achievement of the desired results – regarding collaboration, productivity, and culture. For this purpose, there are a variety of space solutions: owned space, standard leases, flexible leases, flex space, co-working space, and remote work (p. 5). Clearly, the optimization of spaces allows to save costs, by reducing real estates.

An additional perspective for the workplaces' reimagination and reinvention is offered by Ancillo *et al.* (2021), proposing what were called the «five different strategic categories». They are illustrated in Figure 23.

Figure 23 Five strategic categories for the workplace reinvention



Source: Ancillo *et al.* (2021).

They can be interpreted as a kind of path that starts from the *break with the past*, imposing a redefinition of tasks in line with the first step seen in McKinsey & Company (2021).

What many companies get it wrong is applying existing procedures to remote working; devono, not understanding that they must go beyond old (bad) and outdated ways of working (Ancillo *et al.* 2021).

The path proceeds with the *workplace redesign*, which requires to change the use of space. What emerged from the research (Ancillo *et al.* 2021, p. 2305) is that «the future workplace has to be more digital, less hierarchical and more flexible».

Two additional key factors are *technology* and *digital strategy*. The former enhances remote working and favors the collaboration; therefore it turned out to be essential in the workplace during the pandemic (Ancillo *et al.* 2021). Furthermore, to this regard, the speed and effectiveness of the use of digital technologies has greatly surprised and highlighted its big potential (McKinsey & Company 2020).

Therefore, the current digital transformation – that we have explored in chapter 2 – enabled remote work and new ways of workplace (Ancillo *et al.* 2021). Autohors emphasized that a new sense of the workplace has been emerging, that detaches from the mindset that the presence on site is critical.

### 3.3.3 Towards a *hybrid office*

So far, we have seen how the success encountered with remote work has lead to a reinvention of the way and the place in which work is carried out (PwC 2021). Accordingly, most companies are considering the transition towards a hybrid workplace configuration and the office is the main point of discussion (PwC 2021). We might wonder if, due to the advent of new ways of working, it is going to disappear or to reduce its dimensions. As reported by PwC (2021), the office will continue to exist, what is bound to change is its role. Certainly, less experienced workers will need it more than experienced ones, because they require more training, which in turn proves to be easier when provided on site.

A survey carried out by PwC (2021) revealed that nearly 9 out of 10 employees (87%) stated that the place of the office key for collaboration and for relationships creation, consequently considering them as their principal needs. At the same time, 55% of employees interviewed expressed a desire to work from home at least 3 days a week. Creating a link between these two findings, it emerges that the hybrid work model which we explored before could be accompanied by a *hybrid office*, whose main role could be to support collaboration and relationships. Real estate portfolios are also moving in this

direction, with almost 90% of executives planning to change their strategy in the coming months (PwC 2021). Under this perspective, office spaces should create an empowering experience for organizational culture and relationships among employees, for instance by improving their furnishings and increasing collaborative hubs (PwC 2021). Surprisingly, if in the past most of the spaces in the office were dedicated to individual work, now common areas will be preferred to favour relationships, creativity and brainstorming - re-establishing the contact that remote working in some extent takes away.

### *Social anchor*

The new configuration of the office can be defined, according to the words of Fayard *et al.* 2021, a *social anchor*, accentuating in this way its social functions. Undoubtedly, it is necessary to rethink the design of the office and adapt it to new changes. First of all, the great stride forward and the strong diffusion of information and communication technologies, that marked recent times, has revealed that many activities can be adequately performed outside the office (Fayard *et al.* 2021). According to this point of view, employees will work in what has been defined a *hybrid office*, shifting from traditional on-site to home office (Fayard *et al.* 2021).

Fayard *et al.* (2021) pointed out that when employees work remotely, relationships tend to weaken enormously, although at first they seem to thrive. A study by Microsoft (2021) went into more detail, finding that employees' interactions with the close networks – i.e., members of a team with which they have frequent interactions - enhance with distance, whereas employees' interactions with distant networks - i.e., members outside the team, with which they have infrequent interactions – decreased. This might end up in a serious problem, because connections are an important source of innovation and according to Baym, a senior principal researcher at Microsoft (Microsoft 2021, p.15):

«When you lose connections, you stop innovating. There are no new ideas getting in and groupthink becomes a serious possibility».

Therefore, it is critical for organization to overcome this potential issue, and creating meeting points in the office might represent a good solution. In other words, the office will tend to assume a relational role, going beyond the mere place where to work (Fayard *et al.* 2021). In support of this, studies have demonstrated that people interacting frequently and physically achieve higher cooperation, commitment and support (Fayard

*et al.* 2021). Moreover, the collaboration between colleagues from different functions may lead to the creation of new ideas or may help the solution of complex problems (Fayard *et al.* 2021). Therefore, by fostering relational sphere, organizations can achieve numerous benefits. Another relevant problem that may emerge with distance regards the sharing of knowledge, as it cannot always be encoded and explicitated, and therefore easily transmitted (Fayard *et al.* 2021). As a matter of fact, in some cases it relies on interactions and, even if technology can certainly facilitate the process, the office turns out to be the most appropriate place where to share knowledge (Fayard *et al.* 2021).

What previously discussed leads us to conclude that the attitude toward the office have to change. In this regards, Fayard *et al.* (2021) identified three characteristics – reported below - that would make tomorrow's offices different from those we are used to.

- «Designed for human moments»: offices' design will enable different kind of social interactions, resulting in a balance between openness and privacy and basically changing the ways of relating. An interesting and inspiring example is offered by the IOC's Olympic House, whose great central scale, characterized by the iconic shape of the five circles, prompts people to meet and encourages them to stop and talk instead of just communicating via email. Figure 24 clearly shows how the spaces around the staircase are filled with sofas and coffee corners, which represent an evident incentive for conversation. Authors have specified that acoustic management also helps, for example through the use of sound-absorbing material to minimize noise in the areas dedicated to desks, and the use of materials that, on the contrary, favour socialization in the dedicated areas.

Figure 24 Olympic House staircase



Source: <https://3xn.com/project/ioc-headquarters>

- «Customized by technology»: as already mentioned, technology represents an important tool for interactions between people who work remotely and people who work on site. In addition to this, it is also extremely useful for the design and the efficient use of spaces. Authors reported as a perfect example the platform – called *Dojo* - created by Silverstein Properties<sup>20</sup>. Through the use of AI, Dojo record people's movements and helps to design the layout of the offices in the most appropriate way, such as for promoting interactions.
- «Managed to encourage connections»: it is important to be able to convey to workers the perception that they are allowed to socialize and interact with colleagues. This can also be achieved simply with greater participation by leaders or managers in the common areas of the company, thus encouraging others to do the same.

After having explored the on site part of the so-called *hybrid office*, we shift the focus on the remote and domestic part, often left to complete improvisation by workers. Since the office space no longer stops at the office intended as a physical corporate space, it is necessary for organizations to take on greater responsibility in the management and organization of home offices (Microsoft 2021). It is a very delicate issue because it is of crucial importance for the adequate execution of remote work and often workers do not have a dedicated space, thus incurring into numerous problems. Consequently,

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<sup>20</sup> It is a real estate development, investment, and management firm, located in New York.

organizations should make investments to enable people to fully participate, regardless of location (Microsoft 2021).

### **3.4 Looking ahead: virtual reality on the horizon?**

We mentioned above the management of work from home and the following question could arise spontaneously: how to reduce the perception of distances? Certainly through the creation of social anchors, which we talked about previously, organizations could reduce this problem; but their intervention does not stop there. They can go further through the application of the virtual reality (from now on VR) in workspaces - with particular reference to home workspaces - and even if it may seem too "futuristic", the advantages are enormous.

Before going on, it might be useful to clarify that VR consists in the use of a «computer-generated 3D environment to engage people» (Rogers 2020). Although VR generally tends to be associated with entertainment activities and video games, it actually offers a wide variety of uses and in particular, it can be exploited in labor world (Rogers 2020). This is a very recent issue and is set to grow enormously in the coming years: it has been estimated that the virtual reality sector will reach 27.9 billion in 2025, with 6.1 billion dollars reported in 2021 (Fade 2021). This paragraph aims to explore the controversial points of view of which it is strongly marked.

First of all, working from home (WFH) was found to offer significant benefits for workers, including higher flexibility and less commute. Consequently, the better use of the time makes workers more productive and satisfied (Fereydooni and Walker 2020). However, we must not forget that beyond these benefits, there are also downturns to keep in mind. According to Fereydooni and Walker (2020), people working from home often lack an appropriate space for work – the so called *in-home office* -, may be more subject to distractions or may less perceive the separation between work and private life, whose boundary ends up being very blurred because work is as if it entered private life.

In this context, VR could enhance the benefits offered by WFH and provide a tool to address the challenges: for example, it could separate *in-home workspaces*, «create a clear boundary between their career and their personal life», consequently reducing distractions (Fereydooni and Walker 2020). Even what has been identified as one of the major downside of WFH - the loss of human contact - can find a solution thanks to VR. Through

the creation of a shared office space with coworkers, in fact, greater collaboration and greater involvement is fostered (Fereydooni and Walker 2020). If video calls are considered better than calls for communication purposes, VR is even more so since it allows to take a further step (Rogers 2020). In this regard, a research conducted by MeetinVR found that the use of VR leads to a 25% increase in the attention of workers compared to video conferences (Rogers 2020). This considerable outcome clearly highlights the potential of this powerful tool, which makes people feel in the same place without the need to commute (Rogers 2020). Certainly, it has a positive impact on the environment and time management as well.

Nevertheless, Fereydooni and Walker (2020) warned that applying VR requires to face some challenges. The first is the «situation awareness», whereby those who enter VR through the use of appropriate tools or devices are estranged from the external environment and, to some extent, lose contact with reality. The second, conversely, concerns the «interruption by others», whereby people who are not in VR are not aware of what those who are immersed in it are actually doing, and consequently they find it difficult to understand when is the best time to interrupt VR users. This acquires even greater significance, and could be a source of concern, taking into consideration that «it is critical for workers to get re-immersed and regain the feeling of being present in the virtual world» (Fereydooni and Walker 2020).

Furthermore, it is important to underline that when it comes to virtual reality the issue of privacy is of primary importance and experts believe it to be the major concern (Higginbottom 2020). The problem is that through these technologies an enormous amount of data and information is collected that was not usually collected before - especially not on such a large scale - and given the strong actuality of the topic, judges are not adequately prepared and trained to resolve any cases (Higginbottom 2020).

These technologies are not new, but have long been known; according to Deloitte Review (2017), the first application of AR<sup>21</sup> dates back to the Second World War. However, they never reached the apex of their diffusion because basically there was no need. Now the right engine could be represented by the strong change in working landscape and the pandemic imposing remote working (McRobbie 2021; Deloitte Review 2017).

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<sup>21</sup> Augmented reality consists in overlapping digital information on workers' real-world views (Deloitte Review 2017).

Interestingly, Kalantari and Neo (2020) believe that VR is destined to disrupt the field of interior design. Another important application of VR, in fact, is for the design of work environments through the use of fully immersive virtual environments (FIVEs). They let users enter artificial environments, allowing to effectively study their reactions and behaviors to specific designs and, in particular, the impact that the physical environment can have on them.

Returning to the hybrid office we discussed in the previous paragraph, VR could represent the tool through which everyone can be *in the room*, regardless their position (McRobbie 2021). Accordingly, a worker who sits comfortably at home can be thrown into a meeting room in an instant, and really feel there physically. Kane et al. (2021) advised organizations to experiment virtual working way – i.e., remote working – as they recognize significant opportunities in it. They also observed how rethinking the workspace leads to rethinking the workforce and work itself as well. Consequently, the way of working we are used to would change enormously with the application of these technologies. Paradoxically, work activities and remote interaction between people would become much more "real" thanks to the application of VR and this obviously affects the organization of working spaces. Let's think, for instance, to workers within the same office who, by means of oculus and headphones, isolate themselves from the surrounding environment and immerse themselves each in a different *reality*; meaning that they would be physically next to each other, but in completely separate work contexts.

Furthermore, the virtual environment can be completely customized and created according to one's desire (McRobbie 2021; Spacial 2021). An example is given to us by Spacial<sup>22</sup>, which for years had been working on alternative methods of collaboration, initially aimed at a narrow niche and then widely and rapidly spread with the advent of the pandemic (Spacial 2021). It provides telepresence solution through an immersive experience and the creation of an avatar, enabling users to communicate and collaborate in a realistic space (Spacial 2021).

What discussed so far could be exploited in a very advantageous way by companies, and citing the forecasts of McKinsey & Company (2021, p. 4), we could conclude that the working models «will quickly shift from futuristic ideas to standard practice».

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<sup>22</sup> It is the leading provider of 3D software development toolkits for application development.

### 3.5 Conclusion

According to Gubitta and Baraldini (2020, p. 124), «the outbreak of the Covid-19 pandemic has made the hybridization of work an almost mass phenomenon», with the transition to smart working in a very short time. Additionally, «the advent of the era of *hybrid jobs* has led time and space to take on different configurations», leading to the growing diffusion of a flexible way of working that combines both on-site and remote work (Gubitta 2020, p. 221). Therefore, the constraints on the traditional notions of working space and time are eliminated, leaving room for investments by companies aimed at bridging the physical and digital dimension (Microsoft 2021).

In this context, an interesting link emerges between the hybridization of work and the reinvention of workspaces. On the one hand, the transformation of workspaces requires and needs hybrid profiles – for instance, in order to work remotely, each worker needs to develop digital skills, thus expanding the sphere of their skills -, on the other hand, the hybridization of work fosters the reinvention of the workspace – profiles with a wide set of skills, in fact, will be more predisposed to remote work, consequently reflecting in the management of spaces. In other words, remote work was possible only and exclusively because in the meantime the jobs had hybridized.

After having analyzed, by assuming different points of view, the possible reasons that led workers to resign, our proposal takes one possible interpretation - focusing on workspace design: after having experienced the benefits of remote working, many people are unwilling to go back to the old - and now obsolete - practices. Accordingly, the focal point of the chapter revolves around the theme of the reinvention of workspace, taking into consideration both physical and virtual dimensions.

First of all, it is necessary to recognize that in the last two years the way of working has changed profoundly and that people's expectations have changed accordingly, triggering a reaction in their attitudes. We cannot ignore the great success of remote work or go back to old and obsolete practices: the doors have been opened to the Hybrid Work Model and to a new organization of workspace. Precisely, it's necessary to break with the past and to reimagine workspaces and the work-life balance (Ancillo *et al.* 2021; McKinsey & Company 2020). Interestingly, the idea of a *hybrid office* is spreading, whose role is surprisingly different from what we are used to – i.e., a mere place where to work. Conversely, it is moving to be a place where to collaborate and create relationships,

accentuating in this way its social functions: in other words, it can be seen as a *social anchor* (Fayard *et al.* 2021). Three new and distinctive characteristics were identified: «designed for human moments», «customized by technology», and «managed to encourage connections» (Fayard *et al.* (2021). However, some challenges remain open and concern in particular the management of time and working space in the domestic context, often left to complete improvisation by workers. In this regards, it is necessary for organizations to take on greater responsibility (Microsoft 2021).

Finally, if we look ahead trying to imagine the workspace design of the future, relying on the forecast of remote work on a large scale, we could see the application of virtual reality (VR) in working contexts. In line with the words below (AESC 2019, p. 23), VR enables to reduce the perception of distances and to increase the sense of reality felt from a distance, widely expanding the boundaries of the office.

«Virtual reality is finally going to make remote work truly a norm, because it will reduce greatly the sense of isolation that you still get from being a remote worker»

## EMPIRICAL RESEARCH

### 4.1 Introduction

Up to this point it has emerged that the world of work has been profoundly changed by the pandemic, leading companies to face many challenges and have to manage new ways of working. After having explored the theoretical part of the hybridization of work phenomenon and of the importance of workspace management, let's now take a step forward, shifting the focus to empirical research. This will allow us to closely observe and study what's going on in the world of work and to identify the managerial implications.

Thanks to a research carried out by *Osservatorio Professioni Digitali* in June 2020, we had the opportunity to analyze and process the results achieved, highlighting relevant findings and connecting them to what was discussed in the previous chapters. Interestingly, the period covered by the research exactly coincides with the first wave of Covid-19 and with the unforeseeable experience of the lockdown; accordingly, people were certainly not prepared to face such a shocking change.

While the aim of the research was to investigate the transformations taking place both as a result of industry 4.0 technologies and as a result of the emergency period linked to Covid-19, our purpose is to go deeper and to detect which are the factors that enable and foster remote working. More in details, this chapter is organized as follows. Paragraph 4.2 will offer an overview of the research methodology, the sampling and the data collection method. In paragraph 4.3 data collected will be illustrated and major information about the sample's profiles will be provided through descriptive statistics. Then, in paragraph 4.4. we will identify and analyze separately three domains of main interest: workplaces, space management, and time management. Eventually, paragraph

4.5 will deal with managerial implications and with the indications to give to HR directors and/or entrepreneurs in order to better manage the phenomenon.

## **4.2 Research methodology: design, sampling, and data collection**

The research was carried out in June 2020 by *Osservatorio Professioni Digitali*, a joint research project between the Veneto region and the University of Padua, whose mission is to investigate the nature and distinctive characteristics of digital and hybrid jobs. The study was conducted in collaboration with *SdV*, a consulting and marketing research firm. The research aimed to investigate three main factors and their relation: *Labour, Industry 4.0, and Covid-19*. More in details, it focused on transformations taking place in the world of work, both as a result of industry 4.0 technologies and as a result of the emergency period linked to Covid-19.

It is significant to note that the research has been conducted in the heart of the first wave of Covid-19, when there was no experience with the new modalities imposed by the lockdown – i.e. the organization and management of new ways of working.

### *Sampling and data collection method*

The study was based on a sample of 153 adult workers - aged 18 and over - who were registered in the database of *Osservatorio Professioni Digitali* and who work in companies in contact with *SdV*.

A quantitative survey was delivered to the sample and CAWI (Computer Assisted Web Interviewing) methodology was applied for data collection. Precisely, the research was conducted by *SdV*, on behalf of the Observatory of Digital Professions of the University of Padua, by sending each user an email containing a link - customized and usable only once - for completing the questionnaire.

### *The survey*

The survey was based on a total of 13 questions, which we can divide in five different sections:

- In the questions from number 1 to 4, general information on the job were asked, such as the professional area, the working contract type, the size and sector in which the company where respondents work operates.

- In the questions from number 5 to 7, the purpose was to investigate the working methods applied during the lockdown and the frequency of use of certain skills. Precisely, two groups of skills were inquired: skills related to information technology and specific professional skills.
- In the questions from number 8 to 9, the focus was on the assessment by respondents of some aspects related to time management and space management during the period in question, and on what they expect the future ways of working will be.
- In the questions from number 10 to 13, general data about the age, gender, marital status, and education were asked.

### 4.3 Data analysis and descriptive statistics

#### *General information on the sample*

In order to give a more precise description of the sample analysed, in this paragraph we will provide some general information. Starting from personal data of workers, age, gender, education and marital status distributions will be explored. Then, the focus will shift on the working sphere with the investigation of their professional areas and working contracts.

With respect to age, the sample involves workers of different ages, from 18 to over 50. This allows us to embrace different generations and to compare them with each other. The following age categories were identified: up to 29 years old, between 30 and 39 years old, between 40 and 49 years old, from 50 years old onwards. Analyzing Table 1, a non-homogeneous distribution of respondents emerges within the various categories, with a clear prevalence of workers under 40 – representing about 80% of the entire sample. Only 3.9% of workers stated to be over 50. For reasons of statistical significance, this last class will be grouped together with workers between 40 and 49 years old.

Table 1 Age distribution

	%	N
<= 29	41.2	63
30-39	38.6	59
40-49	16.3	25
>= 50	3.9	6
Total	100	153

Source: Osservatorio Professioni Digitali (2020).

In terms of the gender, the sample is perfectly well-balanced, with 51.6% of female and 48.4% of male respondents (Table 2).

*Table 2 Gender distribution*

	%	N
Male	48.4	74
Female	51.6	79
Total	100	153

Source: Osservatorio Professioni Digitali (2020).

Regarding education, the sample involved a very wide range of workers, going from secondary school diploma to PhD. From Table 3, the strong prevalence of workers who have reached a high level of education is evident: 66% of them have at least bachelor degree. Precisely, 13.1% obtained a bachelor degree, 36.6% a master degree, 13.7% a II level Master and 2.6% a PhD. On the contrary, only 2.6% of workers stopped at a low qualification level – i.e., a secondary school diploma – and 31.4% of them reached a medium level, attaining a high school diploma. For reasons of statistical significance, the secondary school diploma modality will be grouped with high school diploma and the PhD modality will be grouped with II level master.

An additional field of investigation was the marital status. The sample turned out to be quite differentiated and this allows to make interesting comparison. Table 4 shows that 59.6% of workers were single, 19.6% married with children and 23.5% married without children.

*Table 3 Education distribution*

	%	N
Secondary school diploma	2.6	4
High school diploma	31.4	48
Bachelor Degree	13.1	20
Master Degree	36.6	56
II level Master	13.7	21
PhD	2.6	4
Total	100.0	153

Source: Osservatorio Professioni Digitali (2020).

Table 4 Marital status distribution

	%	N
Single	56.9	87
Married with children	19.6	30
Married without children	23.5	36
Total	100	153

Source: Osservatorio Professioni Digitali (2020).

Coming to professional area, the research identified a total of 15 categories: production; inbound logistics and procurement; outbound logistics and distribution; administration, finance and control; commercial services and sales; marketing and communication; education and training; services to the person; ICT systems; research and development; legal affairs; services in medical, pharmaceutical, scientific area; services related to tourism, restoration and hotels; management of people, training and organization; services related to cleaning, maintenance, installations. Subsequently, for reasons of statistical significance and to simplify the analysis and make the results easier to interpret, they have been grouped into the 7 areas shown in Table 5. It emerged that the most popular professional area is sales and marketing with 25.5% of total respondents, while the least popular is manufacturing with only 6.5%.

The survey also detected the working contract of workers. For reasons of statistical significance, the response modalities have been grouped into the classes represented in Table 6. It turned out that most of the workers are employed with an open-ended contract (56.9%), followed by a fixed-term contract (15%). Conversely, the number of workers with an apprenticeship contract (11.8%) or a self-employment (7.8%) is very low.

Table 5 Professional area distribution

	%	N
Manufacturing	6.5	10
Supply chain	8.5	13
Administration, finance and control	14.4	22
Sales and marketing	25.5	39
Education & training and personal services	15.7	24
ICT and R&D	13.1	20
Other	16.3	25
Total	100	153

Source: Osservatorio Professioni Digitali (2020).

*Table 6 Working contract distribution*

	%	N
Open-ended contract	56.9	87
Fixed-term contract	15.0	23
Self-employment	7.8	12
Apprenticeship contract	11.8	18
Other	8.5	13
Total	100.0	153

Source: Osservatorio Professioni Digitali (2020).

#### 4.4 Three main domains of interest

After having provided general information on the sample, we will focus the attention on three main domains, illustrated in Figure 25: workplaces, space management and time management. The purpose of this paragraph is to investigate which are the most relevant variables in determining them.

*Figure 25 Three domains of interest*

Source: my research.

##### 4.4.1 Workplaces

###### *Descriptive statistics*

The first main domain of interest concerns the workplaces where workers addressed by the survey carried out their work during the time frame under consideration – i.e., the first lockdown. We are taking into consideration here the results of question number 5 of the survey delivered to the 153 workers that composed the sample.

Table 7 provides a general overview of the answers. The most popular working mode turned out to be “always smart working”, with 43.1% of total employees having carried out their work at home. A quarter of the sample (25.5%) stated that they always worked

on site, while 19% of it said to have alterned between smart working and on site working modes. During the considered period, a part of the sample (12.4%) did not work - due to the restrictions imposed.

*Table 7 Workplaces during the first lockdown*

	%	N
Always on site	25.5	39
Always smart woking	43.1	66
Both of them	19.0	29
No one	12.4	19
Total	100	153

Source: Osservatorio Professioni Digitali (2020).

In order to explore survey's results more in depht, we can analyse them dividing by professional area, working contract, gender, age range, marital status and educational level of the workers interviewed.

*Table 8 Workplaces by professional area*

	MAN	SCM	ADMIN	SALES	EDUC	ICT& R&D	TOTAL
Always on site	60.0	84.6	27.3	7.7	37.5	10.0	25.5
Always smart woking	0	0	45.5	53.8	37.5	75.0	43.3
Both of them	30.0	15.4	27.3	25.6	8.3	15.0	19.0
No one	10.0	0	0	12.8	16.7	0	12.4
Total %	100	100	100	100	100	100	100

Source: Osservatorio Professioni Digitali (2020).

Starting with the distinction by professional area, it allows to emphasize the differences between the type of job and the applied modality. Table 8 shows - for each area - the percentage of workers who worked always on site, always smart working, both of them or no one. What emerges immediately is that in production and supply chain area, 0% of workers carried out their work always from home, but respectively 60% and 85% of them worked always on site. Conversely, administration&finance and sales&marketing presents a situation completely different, with almost a half of workers having worked in smart working; this is even more pronounced in ICT and R&D, where the amount reached the 75% of total workers. It's evident that what the job requires to perform strongly influences the modality.

Table 9 Workplaces by working contract

	OPEN-ENDED CONTRACT	FIXED-TERM CONTRACT	SELF- EMPLOYMENT	APPRENTICESHIP CONTRACT	TOTAL
Always on site	19.5	8.7	33.3	22.2	19.0
Always smart working	32.2	30.4	8.3	16.7	25.5
Both of them	36.8	39.1	58.3	44.4	43.1
No one	11.5	21.7	0	16.7	12.4
Total %	100	100	100	100	100

Source: Osservatorio Professioni Digitali (2020).

Another distinction that can be made is based on the type of working contract (Table 9). What emerges is that workers who have worked most from home are those employed with an open-ended or fixed-term contract. Conversely, self-employed workers turned out to be those who have worked the most on site (one third) and the least in smart working.

Table 10 Workplaces by gender and age

SECTIONS	GENDER		AGE			TOTAL
	MALE	FEMALE	<=29	30-49	>=40	
Always on site	29.7	21.5	19.0	27.1	35.5	25.5
Always smart working	32.4	53.2	54.0	40.7	25.8	43.1
Both of them	24.3	13.9	15.9	20.3	22.6	19.0
No one	13.5	11.4	11.1	11.9	16.1	12.4
Total %	100	100	100	100	100	100

Source: Osservatorio Professioni Digitali (2020).

In terms of gender, more than half of women worked "always in smart-working", compared to less than a third of men. Compared to female component, male component worked more on site or on both the modalities (Table 10). As regards the age range of respondents, it is interesting to note that with increasing age the share of workers who worked in smart working decreases – going from 54% to 26%. At the same time, there is an increase in the percentage of workers "always on site" - from 19% to 36% - and that did not work - from 11% to 16% - (Table 10).

Coming to marital status, it turned out that during the period covered by the survey only one fifth of workers with children worked "always in smart-working", compared to half of single or childless workers (Table 11). Eventually, the last variable taken into consideration in our analysis is the level of education. What emerged is that as the qualification increases, the number of workers having worked always on site decreases (44% - 20% - 16% - 12%), the number of those having worked "always in smart-working"

increases (12% - 40% - 61% - 72%) and the share of workers who did not work also tends to decrease (28% - 15% - 0% - 4%) (Table 11). Nearly half of people who have reached only a secondary or high school diploma stated to have carried out their work on site. Accordingly, it seems that the way of working depends in part on the qualification achieved.

Table 11 Workplaces by marital status and education

SECTIONS	MARITAL STATUS			EDUCATION				TOTAL
	SINGLE	MARRIED WITH C.	MARRIED WITHOUT C.	SEC. AND HIGH SCHOOL	BACHEL OR D.	MASTER D.	II LEVEL MASTER & PHD	
Always on site	25.3	36.7	16.7	44.2	20.0	16.1	12	25.5
Always smart woking	48.3	20.0	50.0	11.5	40.0	60.7	72.0	43.1
Both of them	14.9	30.0	19.4	15.4	25.0	23.2	12.0	19.0
No one	11.5	13.3	13.9	28.8	15.0	0.0	4.0	12.4
Total %	100	100	100	100	100	100	100	100

Source: Osservatorio Professioni Digitali (2020).

### Comments

We can interpret the results of this research in the light of the first three chapters, in which we explored the pervasive phenomenon of hybridization of work and the need for a new organization of the workspace following the pandemic, leading us to make interesting observations. First of all, what several studies have pointed out (PwC 2021; McKinsey & Company 2021; Microsoft 2021; WEF 2021d) has found a clear confirmation in the survey results: a very significant share of workers experienced remote work during the lockdown, with only 25% of them always working on site.

Going deeper, it is interesting to note how younger workers (under 40) seem to be more inclined to the practice of smart-working. According to Gerard (2016), they have on average greater digital fluency and, therefore, this could enable them more to work remotely. Conversely, workers with more years of career might need more training to be able to perform tasks remotely. Another interesting variable that emerged in the analysis is the marital status. In particular, having children seems to discourage smart-working and make people prefer to work “always on site” (37%) or both on site and in smart working (30%). Finally, the educational qualification variable would also seem to affect, since as its level increases, the share of workers who have adopted smart working increases as well. Accordingly, it can be deduced that a higher level of education enables

and favors the transition to remote work.

#### 4.4.2 Space management

##### *Descriptive statistics*

Moving to the other two domains of main interest, they concern workers' evaluation on workspace and time management during the first lockdown period. We are taking into consideration here the results of question number 8 of the survey delivered to the 153 workers that composed the sample. Particularly, we will focus on the first six sections in which the question is articulated – the last four will be analyzed later on in the third domain. The survey asked workers who worked at least partially remotely to evaluate some characteristics regarding the organization and management of space, assigning a value from 1 (equal to very bad) to 5 (equal to optimal) to the sections represented in Table 12.

*Table 12 Space management during the first lockdown*

	AVERAGE
Suitability of the workstation to carry out the work as in the company	3.58
Characteristics of spaces for working from home	3.66
Division between work spaces and domestic spaces	3.17
Level of adequacy of the necessary technical tools and their quality	3.73
Quality of the internet connection	3.64
Support for remote access to the software used in the company	3.74

Source: Osservatorio Professioni Digitali (2020).

It is evident that the section "division between workspaces and domestic spaces" is the one that obtained the lowest evaluation - just above the sufficiency, with an average of 3,17 – thus highlighting how the management of spaces requires greater management intervention. On the contrary, “support for remote access to the software used in the company” is the section that presents the highest average – 3.74 out of 5.

Moving to the distinction by professional area, interesting differences emerge. Table 13 shows the averages of the evaluations attributed by each professional area to the 6 sections; the last column shows the averages, which allow us to make a comparison with the single values. Focusing on the two areas that have experienced smart-working the least, we can make interesting observations: workers in the manufacturing area who worked remotely (only 30% of the total) attributed valuations that were often negative

and always below average – thus demonstrating a strong difficulty experienced. On the contrary, workers in the supply chain area who worked remotely (even lower, only 15% of the total) gave more positive values - thus demonstrating better management. Below-average values can also be noted with regard to education. Conversely, above-average values can be noted in ICT and R&D and Administration & Finance.

Table 13 *Space management by professional area*

	MAN	SCM	ADMIN	SALES	EDUC	ICT & R&D	OTHER	AVERAGE
Suitability of the workstation to carry out the work as in the company	2.33	3.50	3.75	3.65	3.00	3.78	3.71	3.58
Characteristics of spaces for working from home	3.33	3.50	3.88	3.65	3.18	3.94	3.57	3.66
Division between work spaces and domestic spaces	2.67	3.50	3.25	3.16	2.64	3.22	3.50	3.17
Level of adequacy of the necessary technical tools and their quality	2.33	4.00	3.75	3.77	3.73	4.11	3.36	3.73
Quality of the internet connection	3.67	5.00	4.00	3.42	3.64	4.00	3.07	3.64
Support for remote access to the software used in the company	2.33	4.50	4.00	3.74	3.09	4.11	3.67	3.74

Source: Osservatorio Professioni Digitali (2020).

In terms of working contract, no substantial differences emerged. The only relevant thing is that self-employed workers seem to have encountered fewer problems than other contractual categories – with above-average values in each sections (Table 14). Probably, this may be due to their greater experience with working from home.

Table 14 *Space management by working contract*

	OPEN-ENDED	FIXED-TERM	SELF-EMPLOYMENT	APPRENTICESHIP	TOTAL
Suitability of the workstation to carry out the work as in the company	3.61	3.18	3.73	3.58	3.58
Characteristics of spaces for working from home	3.67	3.36	3.73	3.75	3.66
Division between work spaces and domestic spaces	3.24	2.91	3.27	2.83	3.17
Level of adequacy of the necessary technical tools and their quality	3.65	3.36	4.27	3.75	3.73
Quality of the internet connection	3.59	3.27	3.82	3.83	3.64
Support for remote access to the software used in the company	3.67	3.45	4.09	4.17	3.74

Source: Osservatorio Professioni Digitali (2020).

With respect to gender, there are no relevant observations. On the contrary, shifting the attention to age range, curious differences emerge between under 40 and over 40 workers. The latter assigned below average values to almost all sections, with the exception of the quality of the internet connection (Table 15). As regards under 40, they tended to attribute

higher values - thus manifesting a better experience (Table 15).

*Table 15 Space management by gender and age*

SECTIONS	GENDER		AGE			TOTAL
	MALE	FEMALE	<=29	30-39	>=40	
Suitability of the workstation to carry out the work as in the company	3.69	3.49	3.50	3.81	3.27	3.58
Characteristics of spaces for working from home	3.71	3.62	3.77	3.78	3.07	3.66
Division between work spaces and domestic spaces	3.26	3.09	3.18	3.28	2.87	3.17
Level of adequacy of the necessary technical tools and their quality	3.62	3.81	3.89	3.56	3.67	3.73
Quality of the internet connection	3.60	3.68	3.77	3.42	3.80	3.64
Support for remote access to the software used in the company	3.52	3.91	3.86	3.75	3.33	3.74
Total %	100	100	100	100	100	100

Source: Osservatorio Professioni Digitali (2020).

The last two variables taken into consideration are the marital status and the education level (Table 16). Interestingly, workers with children always attribute below average values, with the exception of the section “division between work spaces and domestic spaces”; probably, this division was evaluated by them in a slightly more positive way, compared to the other two categories of workers, due to the greater need to create a division between the two spaces. In terms of education, it is noted that undergraduate workers have attributed lower evaluations than graduates, thus demonstrating a greater difficulty encountered in managing space (Table 16).

*Table 16 Space management by marital status and education*

SECTIONS	MARITAL STATUS				EDUCATION			TOTAL
	SINGLE	M. WITH CHILDREN	M. WITH OUT CHILDREN	SECOND. & HIGH SC.	BACHEL OR D.	MASTER D.	II LEVEL MASTER & PHD	
Suitability of the workstation to carry out the work as in the company	3.64	3.33	3.60	3.57	3.77	3.51	3.62	3.58
Characteristics of spaces for working from home	3.75	3.20	3.76	3.36	4.00	3.66	3.67	3.66
Division between work spaces and domestic spaces	3.13	3.27	3.20	2.86	3.31	3.19	3.24	3.17
Level of adequacy of the necessary technical tools and their quality	3.80	3.40	3.76	3.36	4.23	3.70	3.71	3.73
Quality of the internet connection	3.65	3.20	3.88	3.21	4.08	3.68	3.57	3.64
Support for remote access to the software used in the company	3.86	3.75	3.33	3.36	3.85	3.81	3.76	3.74

Source: Osservatorio Professioni Digitali (2020).

## Comments

In this paragraph we focused on one of the two dimensions of the hybrid work model, pointed out by Gratton (2021): the place of work. During the period of the pandemic, as we all know, the place of work often had to move home, consequently leading people to manage the new ways of working. As highlighted in the previous chapter, working from home leads workers to face many space-related problems. First of all, there is a lack of a space dedicated to carrying out work from home – the so-called *domestic office*. This is confirmed by the survey, whose results reveal that the division between workspaces and domestic spaces was the section receiving the lowest valuations - just above sufficiency, scoring 3.17 out of 5.

Interesting results came out from the survey. The first one is that workers over 40 seem to have encountered greater problems in the space management, almost always attributing values below the average. Another category that has had a below average experience is that of workers with children, probably due to the greater difficulty in finding a balance between work and private life. Finally, according to results achieved, it seems that even the educational level has an impact on the management of spaces: the evaluations of workers without a degree are lower than those attributed by graduates. This means that the first category claimed to have experienced more difficulties than the second one.

### 4.4.3 Time management

#### *Descriptive statistics*

Here we will repeat the same analysis performed for space management. In particular, we will focus on and take into consideration the results of the last four sections in which question 8 of the survey is articulated. Table 17 shows the averages found in the sample regarding workers' evaluations on some characteristics of time management during the first lockdown period. What emerged is that “compatibility in the division of time between work and family” turned out to be the most difficult to manage, while “timetable coordination with colleagues for collaboration” turned out to be the one managed better.

Table 17 *Time management during the first lockdown*

	AVERAGE
Organization of working hours when working from home	3.53
Timetable coordination with colleagues for collaboration	3.73
Compatibility in the division of time between work and family	3.42
Overall management of the times of the day	3.54

Source: Osservatorio Professioni Digitali (2020).

Starting with the distinction by professional area, time management was particularly critical for the education area, with negative evaluations as regards the compatibility in the division of time between work and family and as regards the overall management of the times of the day. Table 18 shows how the values for the manufacturing area were also very low - in line with those found in space management. Al contrario, ICT e R&D and Administration areas hanno mostrato valori sempre superiori alla media – come per il dominio precedente.

Moving to the type of working contract, what emerges is the same as for space management, with self-employed workers having assigned on average higher values because they are figures who are used to working remotely (Table 19).

Table 18 *Time management by professional area*

	MAN	SCM	ADMIN	SALES	EDUC	ICT&R&D	AVERAGE
Organization of working hours when working from home	3.67	5.00	3.69	3.29	3.00	3.83	3.53
Timetable coordination with colleagues for collaboration	3.00	4.50	3.69	3.74	3.36	3.89	3.73
Compatibility in the division of time between work and family	3.33	5.00	3.44	3.32	2.55	3.50	3.42
Overall management of the times of the day	3.00	5.00	3.69	3.48	2.67	3.72	3.54

Source: Osservatorio Professioni Digitali (2020)..

Table 19 *Time management by working contract*

	OPEN-ENDED	FIXED-TERM	SELF-EMPLOYMENT	APPRENTICESHIP	TOTAL
Organization of working hours when working from home	3.49	3.18	3.64	3.50	3.53
Timetable coordination with colleagues for collaboration	3.76	3.73	4.00	3.58	3.73
Compatibility in the division of time between work and family	3.33	3.00	3.18	3.75	3.42
Overall management of the times of the day	3.47	2.91	3.55	4.00	3.53

Source: Osservatorio Professioni Digitali (2020).

Regarding the gender variable, important differences were found. Generally, women assigned valuations lower than those assigned by men and below average, with the

exception of the section "coordination of times with colleagues with whom you collaborate" (Table 20). Therefore, it seems that there is a greater difficulty experienced by the female component compared to the male component. In terms of age, as in the domain of space management, workers over 40 assigned values below the average in all sections (Table 20).

Table 20 Time management by gender and age

SECTIONS	GENDER		AGE			TOTAL
	MALE	FEMALE	<=29	30-39	>=40	
Organization of working hours when working from home	3.81	3.30	3.55	3.53	3.47	3.53
Timetable coordination with colleagues for collaboration	3.71	3.74	3.77	3.69	3.67	3.73
Compatibility in the division of time between work and family	3.52	3.34	3.43	3.61	2.93	3.42
Overall management of the times of the day	3.67	3.43	3.68	3.58	3.00	3.54

Source: Osservatorio Professioni Digitali (2020).

An additional field of investigation was the marital status and the observations are similar to those found in space management: workers who have children assigned the lowest values in all sections, thus showing greater difficulty in managing time during the first lockdown than in the other two categories (Table 21). With respect to education level, it is interesting to note that the two extremes - non-graduates on the one hand and II masters & PhDs on the other - have both assigned below average valuations. What we observe as the qualification increases is initially an increase in the positivity of the assessments, and subsequently a decrease - after the achievement of the master's degree. Taking into account the results shown in Table 21, the only negative evaluations were those attributed by non-graduated workers to the overall management of the times of the day, which they considered insufficient - 2,93 out of 5.

Table 21 Time management by marital status and education

SECTIONS	MARITAL STATUS				EDUCATION			TOTAL
	SINGLE	MAR. WITH CHI.	MAR. NO CHILD.	SEC. & HIGH SC.	BACHELOR D.	MASTERS D.	II MASTER & PHD	
Organization of working hours when working from home	3.51	3.40	3.64	3.57	3.62	3.66	3.14	3.53
Timetable coordination with colleagues for collaboration	3.73	3.53	3.84	3.29	3.77	3.89	3.62	3.73
Compatibility in the division of time between work and family	3.55	3.00	3.40	3.00	3.46	3.53	3.43	3.42
Overall management of the times of the day	3.69	3.13	3.44	2.93	3.54	3.74	3.48	3.54

Source: Osservatorio Professioni Digitali (2020).

### Comments

In this paragraph we focused on the second dimension of the hybrid work model, pointed out by Gratton (2021): the working time. It emerged that some of the considerations previously made for the space management are valid also in this case. As for the second domain, people over 40 assigned below average values in all sections, demonstrating less good experience in time management. Similarly, workers with children attributed below average values in all sections, highlighting greater difficulties in managing working time. However, unlike the previous domain, gender variable acquires a significant importance in this case: it emerged that female component, differently from male component, have attributed valuations below the average. This could be due to the fact that women tend to deal more with household chores and family life compared to men, and in the face of increasingly blurred boundaries between domestic and working spaces, they also see working times dilate as a consequence of the private life influence. Conversely, men might tend to be less busy with home life during working time, consequently leading them to perceive better management.

### 4.5 Managerial Implications

In the light of previous discussion, we can recommend some managerial implication that might turn out to be useful for HR directors and for those involved in business management or in work organization. Figure 26 illustrates the main points.

Figure 26 Managerial implications



Source: my elaboration.

The first managerial implication shown in the figure concerns the *level and type of*

*interaction*. From the analysis of the empirical research it emerged that remote working has in some cases raised problems in managing relationships and/or in coordinating with colleagues, thus placing the focus on the interaction between people. With distance coming into play, it is necessary to change the approach to work organization: activities that take place in the company should necessarily have a high interaction content, while the activities carried out at distance may have less interaction content.

The second managerial implication sees the involvement of a *new leadership* required to intermediate managerial lines. With the transition to remote work, in fact, the procedures previously consolidated, and to which both companies and people who work there were accustomed, were found to be scarcely applicable. Conversely, the need to adapt and to change leadership practices with respect to emerging ways of carrying out work has become evident, moving from a merely physical dimension - which has dominated work relationships until now - to embracing a virtual dimension as well. This may be possible with the application of digital technologies and, as we discussed in paragraph 3.4, in some ways it can also be fostered thanks to the use of virtual reality (Fereydooni and Walker 2020). Additionally, the leadership style adopted by managers must consider the relevance of the relational sphere, even more so when this is made further critical by the distance. Therefore, they will have to try to encourage meeting points with and among employees.

The third managerial implication refers to *organizational culture*, which risks being compromised with the entry into play of the distance. It is necessary for companies to guarantee equal treatment - and to transmit the perception of this equality to workers - between those who work on site and those who work remotely. Therefore, supports will have to be introduced to keep the company united from the point of view of organizational culture and in order to create a balance between the physical and virtual dimensions. Hybrid offices turn out to be extremely useful in this case, since their main role - as we have already seen - is to represent a social anchor and to support collaboration and relationships between people (Fayard *et al.* 2021).

Another significant managerial implication regards *domestic workspaces* and in particular concerns a type of additional welfare which companies should offer in providing a support for the management of work from home. As already mentioned, workers working from home often suffer from the lack of a dedicated space for work and/or from not adequate

tools to perform tasks properly. In this regard, it is necessary that companies take responsibility for it and undertake to resolve any problems or critical points that may arise.

An additional managerial implication involves the creation of *co-working spaces*, which are shared spaces where people from different companies go to work. They can be intended as a sort of common offices that replace the traditional office we are used to and that facilitates remote work when workers do not have an adequate space at home, without the need to necessarily move to the company. In addition, if located in peripheral areas, they allow workers to avoid the always crowded city centers on the one hand, and companies to access more decentralized labor markets on the other, with beneficial effects on recruitment and selection policies.

Eventually, the last managerial implication we identified and shown in Figure 26 concerns *netiquette*, that according to Cambridge Dictionary<sup>23</sup> is «the set of rules about behaviour that is acceptable on the Internet». Given the wide diffusion of remote working, which obviously makes use of digital platforms and the Internet, it is important and useful for organizations to define netiquette to better regulate and organize remote work.

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<sup>23</sup> <https://dictionary.cambridge.org/dictionary/english/netiquette>

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