

Smart Organisations: A New Relationship between Organisations and Individuals in the Digital Age

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Abstract

In recent years, there has been a tendency among some companies and businesses to increasingly transform themselves into virtual organisations where barriers of time and space are overcome and where work is no longer constrained by traditional concepts of working in factories or offices. Technological developments and the adoption of digital platforms such as Yammer, Zoom, Slack, Cisco Webex, only to name but a few, are revolutionising the very concept of organisations, considered now as virtual entities, technologically advanced and without borders. The emergence of new technologies in an increasingly digital knowledge-based economy makes working flexibly possible. People can work anywhere and at any time (Hu, 2019), and each employee can work ‘alone but together’ (Spinuzzi, 2012). Smart organisations represent that organisational model that seems to be more suitable to face these challenges and continuous changes. These lean and extremely flexible organisations are characterised by new operational and functioning mechanisms and are based on elements such as keys, people and technologies that interact with each other constantly and continuously with dynamism, flexibility and speed. It is possible to consider “[...] smart organizations as an open and complex socio-technical system, together with the aspirations, behaviours and values of internal individuals” (Bednar and Welch, 2020: 290).

In light of a socio-technical perspective, the need therefore emerges to adopt new lean and flexible organisations capable of dynamically integrating technical systems (i.e., advanced digital technologies) and social systems (i.e., people, culture, objectives, procedures and structures; see Imran *et al.*, 2021) in order to be more competitive and achieve better performance.

1. Introduction

The COVID-19 pandemic, which began in February 2020, had a devastating impact on the world economy, particularly affecting industrialised countries that were completely unprepared to face this event. The pandemic has dramatically highlighted all limitations and fragility of modern countries not only from an economic point of view but also from a social and health system perspective. The effects of the health emergency have caused casualties, unemployment, an increase in social inequalities and brought many sectors of the contemporary economy on their knees. From this perspective, we can consider the COVID-19 pandemic as a shocking event that has imposed a radical change in current economies, favouring the adoption of new organisational structures and alternative ways of working, far

from traditional ones. In this scenario, digital transformations play a role of primary importance. Digital transformations can be defined as organisational transformations that integrate the use of new digital technologies with business processes in an economy that has the characteristic of being digital (Liu, Chen and Chou, 2011). They represent a boost to the need for change already in progress for some decades in contemporary societies.

Faldetta *et al.* (2021: 2) believe that:

[...] The basic tenet of this revolution is to be found in the increased potential to connect organizations through digital information and communication technologies to organize work across conventional organizations. Furthermore, the reliance on ‘big data’ and algorithms in organizational strategies and models accentuates the need to explore the relationship between developments in digital technology and organizational changes. The emerging forms of network enterprises, extended districts, organizational platforms, holarchies, community of practices, and temporary organizations affect job tasks and roles and require a joint design of digital technologies, organization and work.

The emergence of digital transformations changes organisations and requires rethinking in terms of processes and company culture. The transformation is characterised by strong technological developments that change the way in which human resources relate to each other and to the organisation itself (Jesuthasan, 2017). Technological developments (e.g., robotics, artificial intelligence and automation) have the potential to change the world of work, employee skills and create new business opportunities (de Ruyter *et al.*, 2019). It is no coincidence that organisations undergoing change considerably modify their structure, systems, strategies and, in particular, the way of thinking, managing and enhancing human resources. As previously argued, a systematic and constructive change is fundamental as well as trying to reduce resistance as much as possible (Al-Haddad and Kotnour, 2015). Work systems nowadays increasingly require the participation of workers who interact with each other and use communication and coordination tools. Therefore, the implementation of innovative work models is based on two dimensions: (a) technical (technologies, tools and know-how) and (b) social (people, groups, structures) that are interdependent and complementary. The organisational structure changes in step with the arrangement of spaces (i.e., reconfiguration of offices and sharing of spaces) and the behaviours of the people involved (i.e., greater autonomy, responsibility, professionalism and commitment to the achievement of corporate objectives). This highlights the need to adopt a socio-technical perspective that integrates the social dimension with the technological one in order to provide a more complete understanding of distance work and develop more effective organisational configurations. Such organisations may be defined as (Filos and Banahan, 2001: 101):

[...] knowledge-driven, networked, “smart” organizations dynamically adapt to new organizational forms and practices, learning and agile in their ability to create and exploit opportunities in the digital age. Intelligent organizations involve the ability to create and leverage a digital infrastructure or the ability to enter into a virtual collaboration with other partner organizations

The aim of the present research is to highlight the need for all organisations to adopt intelligent organisational models using a perspective that dynamically integrates technical

systems and social systems in order to cope with the continuous changes and achieve improved organisational performances.

2. Smart organisations

In the late 1990s and early 2000s, high-performance organisations emerged based on the intense collaboration of their members. Thus, all traditional organisational forms are slowly abandoned in favour of a new concept of a virtual and borderless enterprise. In the digital age, organisations do not try to control their environments but rather adapt to them as they are aware that any attempt at control would fail and, in the worst case scenario, could limit creativity and imagination, elements necessary to support innovation. In addition, team-based organisations can manage activities that are not routine requiring a high degree of flexibility, adaptability and dynamism. This paradigm shift gives rise to new types of organisations that, in addition to being agile and flexible, are above all interconnected.

New, interconnected organisations are transferring stable, localised functions on-site to virtual and dynamic teams which possess skills that create value by expanding knowledge and information across geographic and organisational boundaries. The foregoing involves different and more complex management of the teams and of the entire organisation, but at the same time, it determines above all a change in the organisational culture in the company. Human resources also accept and apply the instructions given to them by managers but also develop new ideas, share their visions and freely assert their attitudes, opinions and values. It is essential to promote an organisational culture focused on continuous learning and development of its employees with a view to improving organisational activities and the efficient management of the entire business process (Filos, 2006).

The concept of smart organisation arises from the need for contemporary organisations to dynamically respond to the changing landscape of a digital economy, and the COVID-19 pandemic has accelerated this process of change. The impact that these new organisations have on the economy and society involves significant changes. The Internet and the use of latest technologies not only facilitate hypertext links between different files and documents but above all create dense hypertext links of people and organisations (Levine *et al.*, 2000). The interconnected economy concerns the creation of a very large number of connections between people and organisations regardless of the role they play (Ticoll, Lowy and Kalakota, 1998). Organisations today strive to become agile and operate profitably in an increasingly competitive environment of ever-changing and unpredictable markets.

Such organisations can be defined as knowledge-driven, networked ‘smart organisations’ dynamically adapting new processes and practices, learning and agile in their ability to create and exploit the opportunities offered in the digital age. In the words of Filos (2006: 4), “[...] [s]mart organizations involve the ability to create and leverage a digital infrastructure or the ability to enter into a virtual collaboration with other partner organizations”.

In 1997, the concept of smart organisation by Matheson and Matheson appeared in the literature for the first time in the book *The Smart Organization: Creating Value through Strategic R&D*. The scholars believe that the most important competitive advantage of our time is based on the ability of companies to adapt quickly to change and the ability to make intelligent decisions. Successful organisations build a corporate culture that aims to make appropriate

strategic decisions, thereby aligning processes and practices in order to support business decisions and results.

Smart organisations are defined as organisations that operate effectively in the present and can also effectively face all the challenges of the future (Wiig, 2000). They are characterised by two essential elements, that is, people and technology, that interact with dynamism and timeliness (Sarlak, 2011). Atos (2011) believes that smart organisations are based on three main pillars: (1) knowledge development, (2) operations and (3) communication. Finally, these organisations possess as a fundamental feature the use of the collective intelligence of all employees who are part of them, in order to improve their ability to learn and adapt to the environment in which it operates.

3. Socio-technical approach

The common thread that requires change within modern organisations is essentially based on two important variables: technology and its relationship with humans. These elements involve a radical change in the production system which has a huge impact on the organisational, economic and social system. Unsurprisingly, technological advances and social changes are profoundly transforming the ways and methods of work in contemporary organisations. Therefore, the need to adopt a socio-technical perspective centred on the person emerges. Mohr and Van Amelsvoort (2016: 2) defined the socio-technical approach as:

[...] the participatory and multidisciplinary study and improvement of how workplaces, individual organizations, networks, and ecosystems function internally and in relation to their environmental context, with particular attention to the mutual interactions of the entity's value creation processes.

A socio-technical system is represented by two interdependent and complementary subsystems (Cuel, Ravarini and Varriale, 2020):

- a technical subsystem (composed of technologies, means, tools and know-how) identified by the activities, processes and technologies that allow the transformation of inputs into outputs, generating value for all its stakeholders;
- a social subsystem, made up of the individuals, the relationships that are created and the organisational structure.

A contemporary socio-technical approach centred on the person does not consider the technical and social subsystems as distinct and separate systems but as integrated systems capable of generating co-value and creating innovation. In the literature, more recent approaches suggest analysing the internal functioning of organisations also in relation to the environmental context of individual processes, roles, organisational units, networks and ecosystems (Mohr and Van Amelsvoort, 2016).

4. The characteristics of smart organisations

Smart organisations impose an epochal change that involves a different way of carrying out one's business and one's work. This method is characterised by the slogan 'no matter where'.

The place where the employees carry out their work is no longer important as, it is believed, that it is not the being physically in the office that defines the complexity, wealth and quality of performance. The two extremely rigid pillars of time and space that have characterised traditional organisations and the relationship between person-organisation for over a century have now been overcome. Smart working becomes the main tool through which companies are led, thus removing the old pillars of time and space. Flexible and agile work, both in terms of time and space, must be considered as a new organisational method and not as a different type of contract.

The concept of space changes thanks to the exponential diffusion of the Internet and new technologies that allow one to always be connected at any time and from any part of the world. This implies that people can produce and work in any place as long as it is covered by an Internet network, crossing any physical boundaries.

The time that in the era of the assembly line was considered only a bargaining chip now has a value and as such must be recognised and valued. Time becomes shared between the individual and the organisation as a context within which to produce something, but then managed by the person as a flow within which s/he determines the necessary actions (Donadio, 2017).

'Agile / flexible' organisations can form themselves according to the needs and objectives to be achieved. In this new paradigm, it is no longer necessary to know where and when the person is working but, at the same time, it is essential to know what people are producing and with what effectiveness. Teamwork is the natural dimension in which to operate where self-organisation and close connection with colleagues are the main elements to achieve the planned objectives in the best possible conditions. Teams are fluid, meaning they can be formed and disbanded according to a certain temporality.

The foregoing should not lead us to mistakenly consider that in smart organisations the pillars of time and space dissolve but simply change shape, passing from 'plastic' to a more liquid form. The people who are part of it are capable of being present in different contexts but in parallel with each other. The concept of productivity (linked to the achievement of measurable and achievable objectives), efficiency (thanks to a better allocation of resources in time and space) and the way in which 'solid' people create value in 'liquid' organisations changes.

However, the elements that most identify smart organisations are flexibility and agility. In the literature, many authors have tried to elaborate different definitions, considering agility as the ability to respond quickly to sudden and unpredictable changes (Goldman, Nagel and Preiss, 1995), the ability to adapt and quickly reorganise (Maskell, 2001a, 2001b) managing to profit from the environment. Finally, Kidd (1994) developed one of the most exhaustive definitions of organisational agility by defining an agile organisation as a fast organisation, with a strong ability to adapt in order to respond to unpredictable events, market opportunities and customer expectations.

Agile organisations are mainly focused on elements such as:

- a new organisational culture focused on self-accountability of results and self-organisation of one's activities;
- greater autonomy of the employees linked to time management and obtaining results;

- a liquid leadership capable of acting in a liquid context and capable of achieving objectives, orienting its employees, and making them grow.

Therefore, we can assert without a shadow of a doubt that smart organisations are highly complex organisations and precisely for this reason, there are many elements that characterise them: flexibility, organisational culture aimed at creating value, evaluation of all possible alternatives in order to select the best in that given time and context, continuous learning, systemic thinking, open information flow, employee empowerment and fast, proactive decision making.

The main consequence of adopting a leaner and more agile organisational model lies in a different organisational structure. In the last century, organisations were centred on highly hierarchical structures characterised by centralised decision-making power and consequently by a type of communication (i.e., top-down). On the other hand, contemporary organisations such as smart organisations follow a radically different approach to organisational design, using leaner structures where the decision-making process is decentralised and guided by data analysis (i.e., data-driven). The organisation changes completely the way it is structured, how decisions are made and how power is distributed. The holacratic model theorised by Van De Kamp (2014) proposes an organisational model in which authority and decision-making are divided into (independent but interconnected) teams that are self-organising and not managed from above by a vertical hierarchy. The self-organised teams that make up the organisational structure are called 'circles'. The peculiarity of the model is to focus more on the organisation of work processes rather than the ways in which individual people carry out their work (Robertson, 2007). Each person within the team has a different role as different are the responsibilities but, at the same time, all the elements that make up the team are invested with the autonomy to make decisions in order to achieve the objectives that have been assigned to them. For this reason, the leadership model adopted is based more on roles rather than on individuals. The model is particularly suitable for facilitating the adoption of forms of e-collaboration and social networking within modern organisations.

Holacratic organisations are born, change and evolve over time in order to both make the most of opportunities and to face critical problems through frequent meetings in which roles and processes are reviewed from time to time based on the needs of the team and the surrounding environment in which they operate.

5. The 4Ps of smart organisations

The fourth industrial revolution, closely related to the development of new technologies, implies a radical change in organisational models, in the development of new skills and in the implementation of a new organisational culture. The process of 'smartisation' (Donadio, 2017) of contemporary organisations can only be successfully completed by placing individuals at the centre, considering them as the only and true resource for implementing change in management actions. Human resources cannot be considered by management as a simple part of a system or gear (as in the era of mass production) but as real activators of the entire process.

Smart organisations, therefore, base the entire change process on four fundamental axes that are commonly identified with the term 4Ps. The framework of the proposed model comprises the following elements: People (people), Process (processes), Platform (platforms) and Place

(space). The four axes must be implemented together in order to produce effective, real and lasting change over time.

5.1. Platform

Technological developments have led organisations to convert the paradigm by moving the axis from brick to byte. This transition has important implications both on business processes and on the organisation as a whole. In recent years, we have been witnessing a profound metamorphosis in the way we work and produce. This transformation allows for the creation of a digital infrastructure that also entails the ability for the organisation to be able to virtually collaborate with other partners. In these virtually connected organisational forms, employees have a wealth of information at their fingertips and can collaborate with various colleagues around the globe. All this is made possible thanks to the creation and use of digital knowledge sharing platforms, which have now become an essential element within organisations without which smart organisations could not be implemented.

The main feature of the new technological platforms is to combine the productivity need of each individual worker using software such as Microsoft Office and the ability to collaborate and communicate quickly using, for example, Skype, Teams, Google, among others. Their use involves not only changes in the internal processes of the organisation but also a change in the external relationship with the customer or end-user.

On the one hand, the implementation of digital platforms creates new operational contexts in which to work by connecting everyone anytime and anywhere, and at the same time, it promotes a completely new way of producing value. The platform connects not only the people who work in various capacities within the organisation but also all clusters (e.g., communities, teams, projects) in order to generate an active and transversal collaborative context in which to move and create value. To be efficient, platforms must have a series of elements such as:

- knowledge enabling – solutions that enable document production, smart archiving and easy multi-level exchange;
- communication enabling – solutions that allow the use of synchronous communication channels such as chat, videocall, virtual classrooms, and others,
- collaborative enabling – set of solutions that support the dynamic interactions of processes and projects in order to alternate phases in which we are confronted with others where it is necessary to plan and design actions collaboratively;
- business enabling – set of solutions (e.g., business dashboard or intelligence tools) that help organisations in managing the reference market and end customers (Donadio, 2017).

Digital platforms can be used both within organisations and outside, thanks to the use of cloud computing which allows remote use of software and hardware through any mobile device. In addition, they allow the creation of virtual rooms and meetings that all team members can access, working together in a free and shared workspace. Colbert, Yee, and George (2016) indicated the possibility of having team members represented by avatars that increase their size in relation to how much people actively participate in or, in the opposite

case, increasingly smaller avatars as one remains silent while passively participating in a meeting.

The Cisco Webex platform has introduced a cognitive collaboration with the aim of communicating better through the use of artificial intelligence. Through cognitive collaboration, the company aims to connect spaces, people and devices in a digital dimension that is the best and most efficient possible. The technology that will make the platform smarter and more efficient is called People Insights. This tool, through artificial intelligence, provides in real time the professional profiles of people before a call considering the context of reference through face recognition, thus associating names and roles with the people with whom you have to discuss. In addition, Cisco Webex plans to introduce the Webex Assistant, which is a personalised assistant that is activated through the use of voice commands and responds to all voice commands given in order to make communication between team members more immediate and easier.

5.2. Place

The new digital platforms have contributed significantly to the development of a new way of working both individually and in groups, and the adoption of flexible tools such as smart working has made it possible to rethink the concept of working space in a personalised and more modern way. If we can work from home or from any other place, we must necessarily rethink how to plan and redesign spaces, and collaboration turns out to be the glue that holds together two coexisting worlds: the virtual space and the physical space.

Many scholars believe that workplaces can influence people's behaviour by considering the physical space not only functional to work performance but as a real enabler of the same. Workplaces can influence not only behaviour but be thought of as activators of engagement and as levers for improving performance (Donadio, 2017).

In recent years, there has been an evolution in the concept of 'physical workspace' intended as a layout element in reference to the changes made there. Recent studies have highlighted the importance of implementing promotion strategies in order to reconfigure the space intended as an office layout (Elsbach and Bechky, 2007). The ultimate goal is to increase productivity and better manage the work-life balance of its employees (Ahuja *et al.*, 2007). Therefore, flexible spaces are needed that allow not only to work more efficiently but also to meet the needs and requirements of each employee. Organisations will have to equip themselves with:

- rooms or spaces to discuss, exchange information and exchange views;
- rooms or spaces to think and concentrate being alone;
- rooms or spaces where one can learn, study and experiment;
- rooms or spaces defined as relaxation or lounge bars where one can socialise or simply take a break from work.

The redesign of internal spaces (such as workstations and common areas) is associated with a different conception of the physical place that no longer responds to hierarchical or role logic within organisations but is instead functional to achieving the set objectives.

Activity Based Working, that is, work based on activities, invests in the workspace and workplace of organisations, completely redesigning the working spaces in a flexible and

optimal way but always according to the type of activity that each employee is preparing to carry out. For example, we can hypothesise living rooms instead of classic meeting rooms for informal meetings, collaboration areas to carry out brainstorming activities or dedicated environments to manage phone calls.

Until a few decades ago, every single employee's workstation had a desk, telephone, fax and/or computer. Today, however, the situation has changed enormously. We can imagine the workstation without excessive efforts of the imagination as an office without walls, a digital space that goes beyond physical space. Workers do not carry out all their activities from a single fixed location but can choose the most suitable place depending on the goal to be achieved. Introducing the smart office involves making a profound change with respect to the traditional office, overcoming models such as the fixed station assigned or the single office assigned by status, in favour of the principles of personalisation and flexibility. All that is needed is a smartphone or a personal computer, an Internet connection and an efficient software system that allows the team to work together collaborating from anywhere, without interrupting the flow of information (Mubaroq, Abdullah and Setiawan, 2020). This is made possible thanks to the adoption by companies of smart working, a flexible tool that represents a fundamental lever for a radical digitisation of organisations (Fedorova *et al.*, 2020).

5.3. Process

The development of 4.0 enables a flexible and intelligent production system, capable of synchronously adapting to the changing conditions of the context. In smart organisations, it is essential to streamline organisational processes and redesign them in order to generate added value more effectively and efficiently. Process redesign implies the transition from an obsolete hierarchical system to an actor-oriented one (Langer, 2017).

To achieve these objectives, the organisation requires participatory planning implemented through procedures of co-design of objectives and co-creation of value. Co-design not only stimulates creativity but induces all team participants to work together and collaboratively, planning the actions to be taken in order to achieve a common goal. During the process, team members brainstorm ideas, analyse the problem and define possible alternatives. Through design thinking techniques that place the person and their needs at the centre, it is possible to radically change organisational dimensions such as autonomy, the cognitive content of a job or the social interaction between group members. Sharing experiences and always generating new creative ideas are the key to the success of co-design activities. It is important to reschedule and redesign activities through:

- the identification of practices and codes of conduct that can be implemented by human resources within the organisation;
- the identification of performance measurement and potential development systems through the definition of career paths;
- the identification of methods, channels and tools to encourage interaction, cooperation and collaboration with other members of the organisation;
- carrying out systematic analyses through questionnaires in order to highlight any critical issues;

- the creation of training courses that allow the learning of new knowledge and skills to be applied during the performance of one's duties.

In smart organisations, the redesign of processes implies important changes not only in terms of professional tasks and skills but also in the redesign of the entire organisation in terms of places, times and execution of the task. The activities to be carried out are redefined through greater collaboration and better coordination between the members of the group, thus leaving a wide and full autonomy to both the group and the individual.

In traditional organisations, the design of processes is mainly focused on the macro-structure and the structural relationships that emerge from the definition of organisational charts. In virtual and intelligent organisations, processes are defined instead through the shared access of information and other resources through greater self-organised collaboration and less hierarchy dependence for control and coordination (Boudreau *et al.*, 2011).

5.4. People

The strong competitiveness of the markets, innovation and the diffusion of new technologies has led to profound transformations in the current economy, creating more flexible organisational structures and a different corporate culture, thus underlining the importance that the centrality of the human variable assumes. Human resources are the main critical success factor within any organisation as, unlike all other factors, they possess unique characteristics such as creativity, flexibility, intuition, cognitive abilities. They constitute the intellectual capital of organisations, the heart of any organisational change and represent the only real resource capable of intrinsically generating value and innovation.

Bouée (2015) states that for digital transformation to be successful it is necessary to embrace a new culture and mindset that highlights innovation processes by placing hierarchies in the background. Adopting a person-centred system above all involves giving the worker greater flexibility and autonomy in the organisation and management of their work where they are able to freely choose spaces, times and methods. This implies, on the part of the organisation, the introduction of processes of delegation and empowerment of people on both individual and group results and performance. Management has the task of fostering a new culture based on trust and not on control. It is clear that the transition from a traditional organisation to a smart organisation does not only imply a change of structures and processes but also of culture and skills (Maimone, 2018).

Samuel (2016) has developed five critical skills for the creation of smart organisations such as:

- goal-centric thinking: the ability to reason in accordance with specific objectives;
- collaboration skill: providing managers but also all members of the organisation with the necessary skills to cooperate and collaborate on the network;
- communication skills: the ability to communicate at an organisational, inter-team and individual level becomes a tool for organising and knowing;
- learning skill: learning to learn becomes a fundamental skill to be able to remain competitive on the market especially in a hyper-technological and constantly evolving context;
- trouble shooting skill: it can be defined as the skill required for problem solving;

- playfulness: employees and managers of the future must be skilled users of new technologies and must also perceive a certain gratification in their use. Indeed, the greater the gratification that people get from the use of new technologies, the greater their propensity towards innovation, especially the digital one.

More generally, the crucial role of soft skills and especially digital skills within smart organisations must be supported. The first, also defined as transversal skills, include communication skills, empathy, creativity, flexibility, problem solving, ability to work in a team, organisational skills, leadership skills and even emotional intelligence. In order to accumulate these skills, the digital organisation must provide its employees with flexible workspaces and human resource management policies that motivate and enable them to be more productive (Snow, Fjeldstad and Langer, 2017).

In contemporary organisations, digital skills play a crucial role and represent the *quid pluris* that determines their competitiveness. Calvani, Fini, and Ranieri (2009: 186) defined digital competence as the ability to:

[...] explore and deal with new technological situations in a flexible way, to analyse, select and critically evaluate data and information, to exploit the technological potential to represent and solve problems and build shared knowledge and collaborative, promoting awareness of one's personal responsibility and respect for mutual rights / obligations.

This definition implies the coexistence of three dimensions and their integration:

1. technological dimension: knowing how to research and face new problems in flexible contexts;
2. cognitive dimension: knowing how to read, select, interpret and evaluate data and information;
3. ethical dimension: being able to relate to other individuals in a constructive way and with a sense of responsibility.

Digital skills do not only involve the use of IT tools such as personal computers but also include other skills that we can define as complementary, such as knowing how to search for information, store, create and transmit presentations, make communications online or through the use of social networks. To address this, organisations need experienced employees who can efficiently use virtual collaboration tools, such as Google Drive for collaborative writing, Trello for collaborative project management, and Yammer or Slack for corporate communication and social networking (Colbert, Yee and George, 2016).

The pervasiveness of new technologies and the growing importance of digital skills places organisations in front of two possible scenarios in the near future. The first scenario, hypothesised by Brynjolfsson and McAfee (2014), highlights the growing centrality of social interactions, cognitive contents, greater autonomy of the tasks performed and the enhancement of individual skills. The authors posit a digital revolution in the business world and beyond, wherever faster, cheaper and increasingly sophisticated and adaptable computer objects will lead to a progressive extinction of many manual and concept works. These jobs will be carried out by computers, machines or robots which, at the same time, will make our life easier and better in many areas of our existence. A vision that is not catastrophic because although it is true that many jobs will die out and lose their importance, on the other hand,

new ones will be created with specific and modern skills. On the other hand, the second scenario predicts that new technologies will replace a large part of human work thanks to the use of robots or that processes will be activated that lead to the impoverishment of human work. In this case, many authors expect that jobs in which people are replaced by machines will become precarious and less profitable, with little chance of creating brilliant careers but which will instead be more fragmented and precarious. In this new work environment, inequalities will increase and few workers will have satisfactory working conditions controlled by pervasive surveillance systems (Frey and Osborne, 2017). These two working conditions have been conceived almost exclusively in a theoretical way, without an effective empirical confirmation that established the real probabilities and conditions of realisation.

6. Conclusions

Digital transformation has become a strategic imperative of industrial organisations (Vial, 2019) that radically changes the organisational structure and the way they operate. In order to seize all the opportunities that emerge from the digital transformation, it is necessary to adopt new, 'smarter' organisational forms that are based on a redesign of the organisational structure that involves a redesign of the organisational macro-structure (i.e., organisation chart), of the meso-structure (i.e., virtual and non-virtual working groups), micro-structure (i.e., job design and tasks), business processes and operating mechanisms, with particular attention to the centrality of the person. The contemporary socio-technical approach involves the integration of the two systems (social and technical), thus favouring the spread of a different organisational culture that invests more in people but also in processes, technologies and spaces. Considering the question posed, what has been expressed leads us to believe that digital transformation entails a smart rethinking of both components without which neither an evolution of organisational models nor a change in working methods in terms of quantity/quality of work are possible. Effective and efficient integration of both components represents the greater challenge that all contemporary organisations will have to face in the coming years, if they want to be competitive on the market.

Keywords:

digital transformation, smart organisation, smart working, socio-technical approach

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