

**SMART WORKING: MUCH MORE THAN TELEWORK****Cristina Gabriela COSMULESE***Stefan cel Mare University of Suceava, 720229, Romania  
gabriela.cosmulese@usm.ro***Abstract**

*Digital transformation is a radical change that involves integrating technology and digitalization models into all aspects of business, leading to substantial changes in corporate culture - the way companies and their employees operate. The paper aims to analyse the phenomenon of Smart Working and digital transformation from the perspective of technologies that have enabled employees to continue working remotely during Covid-19. In order to achieve this goal, the following objectives have been defined: 1) to present the topic of digital transformation, with a particular focus on the new technologies that enable this revolution, such as Big Data and Analytics, Cloud Computing, cybersecurity or the Industrial Internet of Things; 2) to explain how digital transformation leads to the transformation of the world of work through the introduction in companies of the technologies mentioned in the first objective; 3) to analyze the concept of Smart Working, differentiating it in particular from the closely related notions of flexible working, remote working and teleworking.*

**Keywords:** *digital transformation; smart working; big data; cloud computing; external drivers*

**JEL Classification:** *O33*

**I. INTRODUCTION**

Addressing Smart Working and its effectiveness in times of crisis, such as that generated by the Covid-19 pandemic, requires first of all identifying the technological robustness of the company and the environment on which remote production action must be based. To this end, it is, therefore, necessary first to assess the company's technological position with regard to digital transformation. The current health crisis has forced many companies to accelerate their "digital transformation" plans or, in some cases, create them from scratch, in order to adapt and react to the new situation and, in particular, to the new way of working. Virtual meetings via videoconferencing, online document exchange and electronic procedures have become commonplace activities for many companies of different sizes. Digital transformation is therefore proving to be not a product or a solution to be purchased, but an approach with a global impact within the company, leading to innovations in production processes and systems.

Today, companies are undergoing a profound structural transformation. In an increasingly digital age, relationships between organizations and customers are being reshaped, leading to the creation of new business models. Companies must therefore relate to a new reality of digital transformation that is developing at incredible speed. The literature associates this transformation with a fourth industrial revolution or Industry 4.0 (Frank, Dalenogare & Ayala, 2019; De Assis Dornelles, Ayala & Frank, 2022). This revolution is placed after the first three industrial revolutions and, unlike its predecessors, is a disruptive revolution that, by changing a specific activity, causes a complete change in the previous business model (Amos, 2019; Winter, 2020). In order to speak of revolution and not simply evolution, two requirements must be taken into account: omnipresence and change. As far as Industry 4.0 is concerned, the first requirement is met, because technologies have and will have an increasing impact on businesses in all sectors, just think of all the start-ups that, thanks to technological innovation, have created products and/or services such as WhatsApp, Paypal, Facebook, Netflix, Tripadvisor, Uber, Instagram, Twitter, etc., which have won the approval of the general public. These are proving to be the new drivers of Economy 4.0 (Zanchetta, 2021). The second requirement, change, is differentiated in different sectors and different companies, as each company will have different equipment and technologies that will need to be replaced or that can be used through specific implementations, for example by installing different sensors or data collection systems. In addition, the change also seems to be gradual in terms of learning within companies, as the creation of a huge amount of data requires professionally trained people capable of analysing and managing it, which cannot happen in a short time.

New digital technologies influence four directions (Maci, 2020):

1. The first one is about data, that's why we talk about Big Data, Open Data, Cloud Computing and the Internet of Things;
2. The second relates to analytics, i.e. the process of deriving information and value from collected data (Big Data);

3. The third is about human-machine iteration and augmented reality.
4. Finally, the last one concerns the industrial sector and includes, for example, additive manufacturing, robotics, and 3D printing. The key elements resulting from digital transformation are presented in Table 1.

**Table 1. Opportunities and benefits of digital transformation for companies**

No.	Key elements	Opportunities and benefits
1.	Collaboration	Using platforms that integrate and support communication flows to facilitate sharing opportunities without physical boundaries and reduce organizational time and costs.
2.	Security	Review of IT infrastructures to improve the level of security and concurrent training on risks and behaviour in relation to remote working.
3.	Mobility	Increase the number of devices and tools to access company space at any time, freeing workers from the need for a fixed workstation
4.	Technology	Redesign workspaces to allow employees to access information, documents and applications autonomously and securely. With advanced wi-fi solutions, videoconferencing systems or centralized printing areas, enabling flexibility and uniform use of resources, freeing up work at the workstation.

Source: <https://www.gruppoinfor.it/news/digital-transformation-e-smart-working/>

The digital transformation path undertaken by companies seems to be the winning key for those who want to maintain a hybrid way of working. Thus, as we approach the end of emergence, agile working will be maintained by the majority of large companies already using it, while a fairly small percentage of SMEs are ready to use it for good. What is the cause? In SMEs, one of the main problems related to the introduction and development of smart working is the lack of a digital transformation pathway. This involves a lack of technology to support remote working, a lack of review of organizational processes, and cultural change in the company itself. These trends highlight the need to create a sustainable and secure smart working model. Companies that, in addition to developing new working environments, have initiated digital transformation processes, on the one hand, can already benefit from the first positive effects: increased production efficiency, higher employee engagement and faster innovation processes. By implementing such technologies companies can adapt to technological change and thus cope with digital transformation, putting people at the heart of the new business model. Technologies play a key role in creating new connected workplaces, if data and applications are managed with maximum security, thus facilitating employee operations (Case, 2021). On the other hand, most technologies are still in the prototype stage, and issues such as "user acceptance, security, ethics, and big data concerns in wearable technology still need to be addressed to improve the usability and functions of these devices for practical use" (Wu & Luo, 2019). The main contribution is to provide additional literature that combines both organizational culture and digital transformation while focusing on explaining how digital transformation is driving the transformation of the world of work through the introduction of emerging technologies into companies.

## II. THE STAGES OF DIGITAL TRANSFORMATION

Digital transformation is not an immediate transformation, but to achieve a complete transformation, it is necessary to go through several stages. The first stage was digitization, which is the transformation of analogue information into a digital (i.e. dichotomous) format so that computers can store processes and transmit information. Digitization is a process that started as early as the 1960s and consists of transforming analogue activities into digital activities (Sen-Gupta, 2020). For example, converting paper documents into PDF files. Typically, this step is limited to digitizing internal and external documentation processes but does not change the value-generating activities. It refers to the evolution of processes by exploiting digital technologies and digitized data. In this case, the key element of this transformation is the improvement of existing IT business processes in order to take advantage of new business opportunities. Among the benefits of digitization, cost reduction is certainly one of the most important aspects, in addition to increased productivity and efficiency (De Groen, Lenaerts, Bosc & Paquier, 2017). Digital transformation is the most pervasive and complex stage. It is an articulated concept that develops along several lines. First, it is an innovation movement that affects the whole company and the way it conducts its business by introducing a new business model, which requires the reorganization of processes to create a new business logic or a new process to create its value. It introduces new and digital solutions, creating greater operational efficiency. Digital transformation is based on the use of digital technologies, especially IT, which plays a huge role in this scenario, enabling a competitive advantage (Leão & da Silva, 2021). by transforming the pre-existing organization, leveraging existing and new competencies, as has already been the case with leading startups. Digital transformation can also become the first axis of differentiation in order to understand the variables

that can affect the success of Smart Working within companies. The second axis of differentiation in order to understand the variables that can affect the success of Smart Working in companies refers to the observation of the following four variables namely: digital resources, organizational structure, digital growth strategy and measurement of key performance indicators (Verhoef, et al., 2019). Through these variables companies aim to create a digital network and a flexible operating system that allows for the adaptation of existing digital resources and capabilities to the changing needs of the market, taking into account the high scalability of the platform and the strengthening of network effects.

III. EXTERNAL DRIVERS OF DIGITAL TRANSFORMATION

Digital transformation has changed the landscape in which companies and consumers operate. The factors that have contributed to the changes underlying this digital transformation mainly relate to the huge amount of data that needs to be analysed, the evolution of the internet, the migration of data and information to the cloud and the changing needs of customers (Zanchetta, 2020). The latter want more and more real-time information with higher expectations.

Following the literature review, I believe that three main factors in particular have led to a radical transformation and these are the emergence of technology use; the disruption of the market and competition with the consequence of business model innovation; and the change in consumer behaviour in response to the digital revolution (Coreynen, Matthyssens, Vanderstraeten & van Witteloostuijn, 2020).

Analyzing the first factor, there is an increasing emergence of new technological tools for digitising information processing and/or digitizing information entities (IoT). The widespread entry of these new digital technologies clearly marks the need for companies to transform their business. For these new technologies to work, they will first need to integrate, working together to effectively achieve a common goal. This collaboration and integration will be needed both inside and outside the company to connect entire supply chains. The second factor to consider is the changing competition in markets. It has changed in terms of the players, with traditional and market-leading companies now being overtaken by innovative digital competitors and beyond: for example, banks such as ING see Amazon as a major potential competitor, while one of the world's largest shipping companies, Maersk, faces potential competition from Alibaba. (Verhoef & Broekhuizen, 2019). Finally, the third factor relates to consumer behaviour, in particular the changes that have occurred in response to the digital revolution (Rangaswamy, Nawaz & Changzhuang, 2022). As we can imagine, the use of mobile devices is becoming increasingly prevalent among consumers, as is the use of apps and new AI-based technologies such as Amazon's Echo or Google Home. So all these tools are making consumers increasingly connected, informed and active: they are becoming co-creators of value.

According to a Mckinsey study, more than 70% of all digital transformations fail. Success rates vary by industry and company size. Below are the key factors to successful digital transformation according to Mckinsey (see Figure 1).

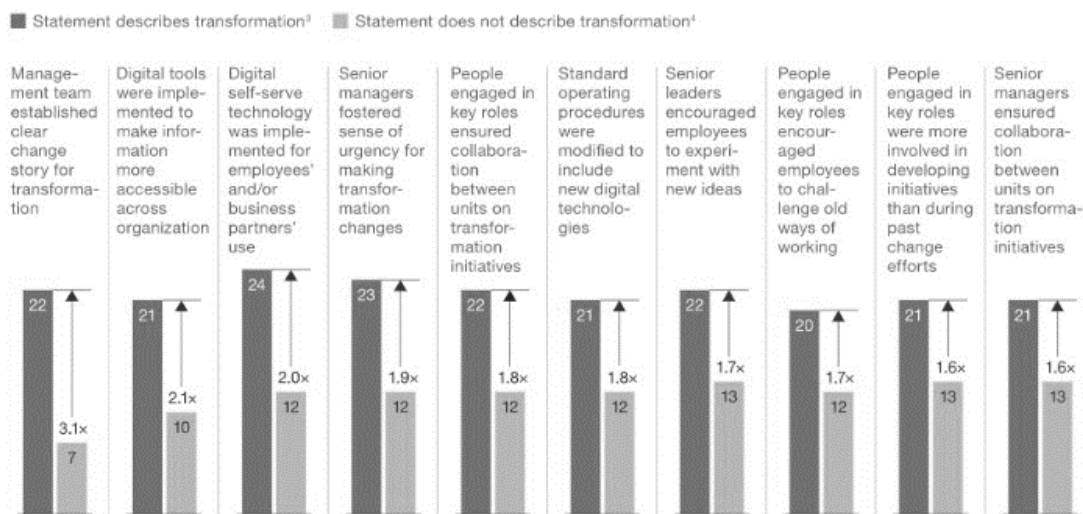


Figure 1 – The success rate of digital transformations, by key factors, % of respondents

Source: <https://www.impactfirst.co/4-key-factors-in-digital-transformation-success>

Interesat este ca studiul releva faptul că companiile cu mai puțin de 100 de angajați au mai multe șanse să raporteze o transformare digitală de succes decât companiile mari.

Potrivit Lieke-Netheler, Packmohr & Vogelsang (2018) principalii factori externi ai Digital Transformation în Manufacturing, la nivel organizațional sunt îmbunătățirea proceselor, îmbunătățirea locului de muncă, integrarea verticală, sprijinul managementului, integrarea orizontală, reducerea costurilor. De asemenea, la nivelul tuturor autorilor industriali apreciază cererile clienților, lanțul de aprovizionare, impulsul inovării, presiunea pieței, legile/guvernul, sprijinul angajaților, au influențat transformarea digitală. Dintr-o înaltă perspectivă, Osmundsen, Iden & Bygstad (2018) în urma unui studiu efectuat la nivelul literaturii de specialitate în ceea ce privește Drivers and Objectives, Success Factors, and Implications, au evidențiat faptul că la nivelul oricărei întreprinderi principalele factori care influențează transformarea digitală sunt: customer behavior and expectations, digital shifts in the industry, changing competitive landscape, regulator changes.

#### IV. SMART WORKING: INCREMENTAL OR DISRUPTIVE INNOVATION?

At this point, it is logical to ask whether Smart Working is a completely new concept or the result of constant evolution. Smart Working is certainly a complex concept that needs to be dissected to be analysed in more depth. To begin with, it is essential to understand that Smart Working is rooted in systemic and progressively more complex organisational developments, which are presented in order of flexibility (from least flexible to most flexible) in the following list: 1. Office-based working: this is the type of working that is closest to the traditional way of working, where all employees are on-site; 2. Office work with the option to work from home: employees have the option to work from home on certain days of the week; 3. A remote team in a single time zone: different team members work remotely; 4. A remote, globally distributed team: different team members are distributed over several time zones and in this case asynchronous collaboration becomes crucial; 5. A fully distributed team with nomadic members: this is a fully remote team where some team members are nomadic and travel regularly (Limbach, 2019).

Nowadays, companies have many geographically dispersed employees, so platforms are an important tool for knowledge sharing. The information contained in these platforms is important for the success of the business strategy. As the amount of digitised data grows exponentially, these tools become increasingly important for sharing information and meeting organisational needs. Employee communication systems can include, for example, a collaboration platform, social networking tools, a company intranet and the public internet. By working together, employees are able to exchange information and work simultaneously on remote projects through a combination of software technologies, networking capabilities and collaboration processes. Companies rely on cloud-based collaboration tools to increase employee productivity, get employees interacting and enable them to share information. There are several collaboration platforms, such as Fuze, Slack, Workplace and Microsoft Teams, that offer video conferencing, messaging services and the ability to exchange information within the team and externally with customers and partners.

Smart Working has suddenly changed established working paradigms, especially among managers and older workers, because the only way to continue working was to work from home. In this case, it is possible to see Smart Working as a disruptive and overwhelming solution, especially for those workers and companies who did not think it was possible to carry out their work in such a way, by virtue of the fact that many companies/organisations have not yet significantly switched to Smart Working models (Menshikova, Fedorova & Gatti, 2019). A radical change, therefore, which in many ways was shocking and destabilising, but which then slowly gave rise to an awareness of the possibility of embracing Smart Working as something positive and beneficial (Bednar & Welch, 2020). Certainly, from now on there will be a greater awareness of the Smart Working features, giving employees the possibility to make a more conscious choice about whether or not to take advantage of this opportunity.

In this matter, business process automation plays a very important role because it first requires an analysis phase in which the organisation's infrastructure is examined and its requirements and objectives are assessed, then follows the actual implementation of the technology, in which each business functionality is registered, the integration phase, is equally important, in this phase it is necessary to connect the newly installed programs with the existing ones, thus allowing efficient communication and the last phase the maintenance and support phase, in which defects and problems are analysed so that they can be corrected in time (Bevans, 2021). In the management sphere, automation definitely simplifies communication between different divisions and departments while improving workflows within the company. Also in this sphere, another important aspect that needs to be highlighted concerns the management of document flows, which is inseparable from an employee-friendly automation process and strict control over the ever-increasing flow of documents needed to carry out normal activities. Indeed, data must flow smoothly and without inaccuracies within the company to bring accurate information to individual departments (Zanchetta, 2020). In terms of corporate production, automation helps to maintain a constant speed of the process by minimizing the cost and time required to execute the final product and by employing, through an efficient allocation of human resources, a more skilled and stable workforce, able to act

constantly to reduce defects and manual errors (Aoun, Ilinca, Ghandour & Ibrahim, 2021). Finally, in terms of the business network, automation is able to better satisfy customers by providing them with a flexible platform that is able to increase business competitiveness and optimise communication flows between companies. Digital transformation could, however, pose difficulties for many companies whose structure is still inadequate to cope with this complete transformation. In particular, companies may face some problems in implementing such complex and changing systems due to operational mechanisms and analogue processes that have not yet been organisationally streamlined to apply business process automation methodologies. Another obstacle to the implementation of these infrastructures is the difficulties of managing and communicating new systems with existing ones, as well as the high maintenance costs. In addition, companies have to manage increasingly complex and changing IT architectures based on different types of platforms and articulated technology stacks, and must continuously adapt new development approaches and related technologies. Finally, the costs of maintaining the entire infrastructure are sometimes not as affordable for companies.

## V. CONCLUSION

I believe that if a company intends to successfully implement a digital strategy, it needs to consider several aspects. First, the company needs to understand and realize the urgency of change, in that decision-makers need to be clear-headed and deliver this message to the people they work with: digital strategy. This should not be implemented with plans that set targets that can be achieved years down the line. Innovative technologies and ideas move at a constant speed. Technology and digital-based start-ups are changing the world in which services are traditionally offered at lower prices. Second, leadership needs to be accountable because, a digital strategy aimed at change can only start at the top, with professionals supporting change within the company. Decision-makers must be prepared to take the reins of change or assign tasks, for example, to a Chief Digital Officer, a new professional figure created to support digital processes within the company. Third, it is important to define milestones and deadlines, i.e. priorities and tasks should be set in formulating a strategy to be adopted based on availability and needs. Fourth, the acquisition and storage of data going in and out of the company must be taken into account, as data and its analysis are key factors in implementing a digital strategy. Data should be used to create value and optimise processes. It may therefore be necessary to train staff or use a chief data officer. Finally, implementing a successful digital strategy requires upgrading the data centre, which is why every company needs an IT architecture model, preferably in the cloud, to manage devices and create databases. It is important for the company to carefully evaluate the amount of data and energy required to choose the most appropriate cloud computing solution.

As is well known, to function properly, companies are guided by organisational habits that have been reinforced over time, even among employees, who, when faced with new trends and new growth opportunities, are the first to resist. Indeed, a paradigm shift, such as Smart Working, is not easily metabolised within organisations and, increasingly, the whole Smart Working project needs to be embedded in complex change management pathways, where technologies, spaces and people are integrated into a single flow. Smart Working is a culture that has evolved and is still evolving, but how long will it remain after its emergence? Obviously, there's no immediate way of knowing, but it would be a shame for the world of work to regress as quickly as it has embraced change itself.

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