

Digital transformation of management in the global pandemic situation

Mariya Ivanova
New Bulgarian University Sofia, Bulgaria
maivanova@nbu.bg

Abstract: *The global pandemic has changed the responsibilities of managers and the functioning of organizations. Those who had embarked on the path of digital transformation found themselves in a favourable position and quickly adapted to the imposed changes. Their managers had accumulated experience and training for effective management of turbulent organizational change. The adaptation of managers helped to transform the work process and control the implementation of tasks. The report discusses issues related to the impact of the Fourth Industrial Revolution and the global pandemic situation on management. Key factors determining the direction of management transformation towards leadership in the conditions of digitalization and "work from home" are described. The essential characteristics of the digital literacy of the leader are commented. The impact of artificial intelligence on strategic management and approaches to human capital management is assessed. Observed management problems are studied and guidelines are given to deal with management challenges in the context of a global pandemic.*

Keywords: GLOBAL PANDEMIC, DIGITALIZATION, LEADERSHIP, DIGITAL LITERACY, ADAPTATION OF MANAGERS

1. Introduction

The rapid spread of COVID-19 after March 2020, the ensuing pandemic situation and governments' decisions to lock down, have forced the leaders of various organizations around the world to rule in a completely unfamiliar context. The global pandemic has changed the responsibilities of managers and the functioning of organizations. "At the beginning of the pandemic, the main challenge for us was to maintain stable business growth, competing with the world's giants in the market and to meet the goals we set. We have always had a good organization and the opportunity to work everywhere, but this situation has led us to redesign a number of processes and tools" said Boyan Ivanov, CEO of StorPool Storage [1].

In a context of many questions, quick response and adaptation proved to be extremely valuable qualities. Those who had embarked on the path of digital transformation had a favorable position and quickly adapted to the imposed changes. Their managers have demonstrated their experience in effectively managing turbulent organizational change. Radoslav Nikolov (SAP Labs Bulgaria) admits that "Our company has formed a team for dealing with crisis situations for years. ... I would like us to be 100% more prepared for the remote work of all colleagues before the crisis. We were over 90% ready and it took some time to reach that 100%." [2]

2. The Adaptation of Managers

The adaptation of managers *helps to transform the work process and control the implementation of tasks*. It depends on key context factors. It is needed when living and working conditions change. There are different types of adaptation in human nature: physiological; anatomical; psychological; professional; social.

The Physiological adaptation is a process - a response to changes in environmental conditions.

The Anatomical adaptation is a process of change in the structure of the organism or the structure of its individual organs.

The Psychological adaptation is a process in which the fundamental foundations of the mind are rethought in accordance with the new requirements of the world around us.

The Cultural adaptation is "a long process of readjustment to a new environment, at the end of which the individual feels comfortable; a process through which the rules and customs of the new cultural context are learned" [3]. Getting acquainted with the various aspects of cultural adaptation and analyzing methods for a smoother transition through the period of acculturation are extremely important for the successful realization of modern person in the XXI century. In the age of globalization, the collision with elements of culture shock in business communication, social life and cultural exchange is inevitable.

The Professional adaptation is a process of acquiring new professional knowledge and skills that determine the success of the team and the organization.

But the adaptation of managers is primarily related to social change, which maintains adequacy and manages the state of the individual. *The Social adaptation* is a form of interaction of the manager with the social environment. It is a special kind of socialization caused by changes in the environment, requiring qualities that the leader does not have at the moment. The Social adaptation is a social production and creativity, as too often it is preceded by the absence of models and requires its own discoveries.

In addition, in order to adapt, *managers change their economic thinking and behavior*. They are characterized by great energy, entrepreneurship, positive motivation, willingness to learn new knowledge and habits in various economic fields. Economic reforms can lead to psychological changes - positive and negative; deep and superficial; near and far in time. Individual psychological qualities that play an important role in *economic adaptation* are adequate self-esteem, speed and accuracy of perception, flexible thinking, resilience, helpful memory, activity, self-control, continuous learning and self-development, psychological readiness for marketing, high energy potential, motivation for achievement and developed practical intellect, readiness for risky economic behavior. "A very big difficulty is how we can be as sure as possible that we are making the right decisions about our work, and we are making them fast enough - the decisions that balance this to keep our colleagues' health and safety as good as possible (including mental health), while at the same time striving for them to be able to work effectively and keep the motivation in the teams. At the beginning of the COVID-19 pandemic, there were a lot of unknowns, which made these decisions even more complex." [2] Risk can be defined, on the one hand, as the expectation of a possible danger and the threat of undesirable consequences, and on the other - as a successful action that requires courage and hope for success. Risk is a characteristic of economic behavior in terms of its activity, necessary to achieve the set goals in a situation of excessive economic uncertainty. Important for risky decisions is the subjectively expected benefit, with a tendency to maximize it. In this sense, risk is seen as a preferred course of action, associated with great danger, but also with great expected benefit and maximum profit.

3. From management to leadership

Successful pandemic managers respond as leaders, show leadership qualities, and apply appropriate leadership styles as appropriate. They change the organizational culture, influencing the attitude of people to work and business in the new working conditions. Their aim is to adequately respond to changes in the business environment using computer technology and the established company value system shared by employees. Stimulate constructive ideas and innovative concepts. Adrian Seligman, a

member of the Board of Directors of the Top Employers Institute, says that the Human Resources Department has been transformed into People & Culture, with Chief Experience Officer, Experience Manager and others appearing. "We currently have technologies to support and simplify recruitment, streamline introductory training and talent and performance management. This enables companies to better adapt the new digital experience for their employees. Instead of focusing on administrative tasks, human resources departments invest their efforts in managing employee engagement and strengthening their culture. In the last five years, especially in human resources departments, new roles have been created focused on digital transformation: data-driven positions to support decisions, data analysts to better shape new organizational models or positions with a strong digital presence to support employees' technological expertise." [4] Progressive companies find that highly centralized organizations are unable to respond to dynamic changes in the market and technology, and are rapidly restructuring. The policy of openness, trust, commitment and consent in building work teams - are important components of successful management. Proper management of human capital is the key to change and the means to achieve company strategy in the unknown future. Leadership is a style of management that stimulates the innovative behavior of employees, ensuring a continuous process of creating and using new knowledge at all levels in the organization. The value of an organization is not only in financial indicators, but in knowledge. Successful managers invest in work teams formed by knowledgeable and capable people with innovative thinking, progressive business ideas and innovative activity.

No business model will work without a clear strategy, shared values and digitally oriented leadership.

4. The Digitalization of Business in the global pandemic situation

The digitalization of business is a radical change in the tool base, the ways of transmitting and storing information in organizations. The speed of digitalization is a result of how innovative ideas relate to people and how easily these ideas spread. "The era of personal computers has caused a real revolution that has affected millions of people... No one can predict where we will end up this time, but I am confident that this revolution will affect even more people and move society far ahead. Radical changes will occur primarily in communication between people." [5]

Digital transformation is change and development - change and development in the way we live and work, and the participation of technology in this way of life and work, as well as their contribution to the development of society and people. According to a PwC survey, "81% of CEOs surveyed identify technological advances as the most important business challenge, even greater than demographic, climate or other global changes." And the results of the PwC NextGen 2019 [6] survey show that the next generation of family business owners in Central and Eastern Europe believes that digital technologies are crucial to the success of their companies. 30% of respondents are concerned that their family business is currently lagging behind its competitors in the field of digitalization. Given their digital competencies, almost 90% of respondents believe that they can add significant value and help their companies have an appropriate strategy for the digital age. In the conditions of digital business environment with main characteristics - turbulence, connectivity, interdependence, dynamism, uncertainty, uncontrollability, relativity, the competitive advantages are not constant. Using new business models can be inefficient and misleading, based on wrong management and technological decisions. But the fear of taking risks, following a strategy of stagnation to maintain the current state of the company and inactive actions, hide the inevitable corporate death in the conditions of digital transformation. In their publications, various authors (Bradley, James, Macaulay, Noronha, Wade, [7] Chaffey [8]) offer a variety of models for digital business transformation,

guided by the idea of avoiding destructive innovations and creating new opportunities for business expansion.

The basic model for successful digital transformation of the company covers three main areas of change: consumer behavior (while maintaining the idea of external and internal customer for the company), digitalization of business processes and a new business model. But this is not enough to provide a lasting competitive advantage. In an interview, Dr. Eng. Boryana Manolova from Siemens Bulgaria, said that at the beginning of the pandemic, which imposed the need to readjust to remote work and the associated reorganization of processes in the company, there were some concerns about how sustainable and efficient will be prove this model of work. "Fortunately, both the internal infrastructure and our colleagues have found themselves at the right level to cope with the new circumstances and responsibilities." [9] It is no coincidence that globally, Siemens maintains this way of working for a few days a week and after of the pandemic. Siemens Bulgaria's overall approach to the crisis shows the success, both in terms of rapid internal adjustment to new circumstances, and in relations with customers and partners, the implementation of projects, while ensuring the health and safety of employees. Siemens' practice is indicative that the remote control model is applicable and efficient.

The developed model of digital transformation requires special efforts to restore effective change in additional areas such as: redefining and applying new models of organizational structure, development of digital skills of management and executive staff; building a modern IT infrastructure (including people, the Internet of Things, big data, the cloud), the degree of digitalization of services, digital channels for interaction and communication.

The pandemic caused by Covid19 accelerated the processes of digital transformation of business, due to the desire to preserve the economic stability of the affected countries and to preserve people's health. One of the manifestations of these processes is the relocation of the office to the home. The research done in Comlink EOOD is indicative of the extent to which work from home affects the work process and how it changes the results. The object of research - the company Commlink Ltd., located in Sofia, is engaged in: market research and recruitment through HR platforms, internal systems and public social networks. In a pandemic, in one week the company mobilizes and provides devices and secure access to the internal database for each of the employees. The main goal of the study is to determine how successfully the business was transferred home and continues to operate in the parameters before the lockdown, how the company is experiencing shocks and whether it is severely affected due to more difficult communication between teams. The research methodology includes a comparative analysis of internal company documentation, which determines the difference in the achieved target goals of the employees from the months before the isolation due to the epidemic, with those during the work from the homes. Anonymous questionnaires and a structured interview were also used to increase the reliability of the information. It was found that the negative aspects of working from home are associated with weaker communication and lack of good monitoring by managers. Not all workers may be fair and abuse their time if the company does not have a good internal tracking system. It is also extremely difficult for new workers to integrate and socialize. A similar problem is observed with long-term employees, when there are innovations and systemic changes, as training is more difficult from a distance. The positive aspects are related to work preferences - 70% of the interviewees believe that they are more productive than at home, 60% of them categorically state that there are no obstacles at home to concentrate on work tasks. What is specific in the answers of these respondents is that most of them would prefer to work at home from 3 to 5 working days on average. It can be concluded that they like working at home because of the "time earned before and after work". They do not have to travel and have time for personal commitments immediately after the end of the working day. It turns out that personal results are better and individual performance is higher. But despite the positive aspects, the general attitude towards work at home is rather

negative, because "communication between the teams is deteriorating little by little." In the short term, the average performance from the home office period has increased by about 10% for the entire team, but nevertheless, with a longer period of work from home, this would shake the resilience of the business due to poor communication.

This case gives us reason to summarize that in the conditions of the digital revolution and after the pandemic: the home office can remain as an element of work processes but within a reasonable time frame; to be used as a motivational tool to attract new employees looking for flexible working hours; to provide a professional and multifunctional platform for remote communication that is fast and efficient (other than Skype); to take a research approach to the process of remote communication in order to establish the most appropriate channels and methods of communication between team members; to develop an adequate monitoring and control system.

The digitalization of industries has its institutional aspects within the European Union. These aspects are related to policies and management approaches for their implementation. According to Eng. Kiril Radev "The collaboration of measures, tools and approaches can be united under the common name - Institutionalization 4.0" [10]. Through a monitoring system, the European Commission carries out an annual assessment of the extent to which digital technologies are being implemented in the various areas of socio-economic life in each Member State. It is based on the Digital Economy and Society Index (DESI), which is a complex indicator derived from the values of the so-called key indicators of Europe's digital performance and gives an idea of the pace of development of EU Member States in terms of their digital competitiveness. One of the main indicators of the index is "human capital and digital skills", which measures the degree of skills acquired by people (considered as human capital) needed to take advantage of the opportunities offered by digital technologies.

The success of the digital transformation depends on the digital literacy of the leader, the strategy oriented towards high technological achievements and the organizational culture oriented towards accepting change in the overall organizational system.

5. Digital Competence of Managers

Digital literacy is not an abstract concept.

The term "digital literacy" was first introduced in the late 1990s by Gilster [11]. It recognizes the fundamental but revolutionary uniqueness of the Internet and identifies the digitally literate as possessing a specific set of information skills (eg search and evaluation) applied to text and multimedia information found on the Internet and located in a formal learning context. Digital literacy goes far beyond basic reading, writing, listening and speaking skills. It includes three main elements: technological skills, critical thinking skills and contextual practices. Digital literacy cannot be understood out of context; knowledge is found and embodied in very specific ways and is often applied according to specific goals. Cultural, social, civic, political and economic impacts extend the original concept of digital literacy. These impacts require skills to express, create, share, interact and engage. The different socio-technical reality requires managers to have not only the ability to use technological means, but also knowledge of the norms and practices for their application. In this sense, being "digitally literate" covers issues related to cognitive power, security and privacy, creative, ethical and responsible use of digital media. Definitions and different points of view on digital literacy can be found in the publications of Bawden [12], Lankshear and Knobel [13], Jones and Hafner [14] and others. Definitions of the concept now range from information literacy in a digital environment (eg: finding, retrieving, organizing, evaluating, managing and presenting information) to broader, more complex conceptual frameworks that cover a wide range of skills, understandings, norms and practices.

The systematization of the different opinions of the authors on digital literacy leads to the definition of the following mutually complementary points of view:

The first perspective defines digital literacy as a set of discrete abilities or behaviors expressed by users of automated information systems. The digitally literate individual knows when and how to effectively use digital resources to address information needs. This perspective examines and explores behaviors that address a number of value-added criteria known to us as quality value, including accuracy, reliability, validity, and completeness of information. In addition, we can include the ability to create and share information online, in user-created forums and social networking sites.

The second point emphasizes the application of abstract mental models for activities involving digital content. These patterns come from different areas, but most of them are cognitive in their perspective, focusing on how individuals process the information in their head. These are metacognitive structures that support the activities of the individual's digital literacy by encouraging reflexive thinking and increased awareness of individual thinking about a task or problem. These models focus on problem-solving skills and are abstract enough to be applicable in a wide range of situations and contexts.

The third perspective expresses digital literacy instead of skills, through the general ability of people to live, learn and work in a digital society that recognizes the ever-changing nature of technology and the evolving expectations of digital people.

The fourth point of view is related to the cognitive approach to the challenges of digital media. Media literacy in the digital age emphasizes the interrelationship of four factors in understanding new media: presentation, language, production and audience. These components provide a structure for thinking and evaluating media messages. This emphasizes critical thinking and analysis.

The fifth perspective includes a reflective understanding of ourselves in terms of technology and digital services, an awareness of network structures - both social and technical, and an understanding of the social aspects that shape much of our digital engagement. A person who is digitally literate is not just an ordinary user of digital information. He sees himself as a person engaged in the activity of creating digital information. In an age of unprecedented opportunities for digital trade, social and political engagement, lifelong learning and collaboration, the digitally literate must be a constantly active and vigilant participant. This position changes the way one understands the relationship between tools and infrastructures. If we see ourselves as part of the conversation, we want not only to make our productions easily accessible, but also with many followers. As such, we require tools and coherently designed socio-technical systems.

These perspectives are not different in themselves and the authors do not oppose each other, but complement each other. Each definition reflects some of the historical and scientific foundations of the author's point of view. They represent different approaches to digital literacy, stemming from different scientific traditions and many ways of thinking differently about what literacy is and how literacy is applied in formal and informal settings. Values, goals and institutional priorities play a role in defining the meaning of "digitally literate". The numerous perspectives and the diverse origins of the authors' opinions lead to the conclusion that no uniform definition can be given.

Summarizing our observations and research, we offer a model of a digitally literate leader. A synthesized model of the professional digital competence of the leader includes:

- *Strategic Leadership and Business Acumen* - leads an interdisciplinary team and influences stakeholders from different functional and geographical areas; creates innovative business and operational models that provide value to organizations;

- *Systematic Approach* with developed analytical thinking and structured problem solving;
- *Complex Competence* - management of "teams of leaders", management of hitherto unknown communication processes between "knowledge workers" and robots, understanding of the whole - business environment and open organizational system, digitalization of processes, building digital communication, information, "political" and social networks, project management; competence in many disciplines - at the level of understanding and communicating knowledge;
- *Specialized Competence* - in the field of one specialization and at least one high-tech system;
- *Competencies in the Field of High Technologies* - to have a vision and ambition to change the business to achieve higher results, using the opportunities for innovation and trends in high technology.
- *Key skills* - learning skills, including the ability to constantly update knowledge and upgrade with new knowledge, building on existing ones; vigilance - the ability to constantly monitor innovations in the internal and external environment (economic, social, cultural, political, technological, etc.) in order to maintain awareness of the latest trends and respond quickly to their impact; adaptability - openness to change (positive or negative), flexibility in the workplace, ability to accept, prepare for and cope with change; drawing lessons from failures that turn into valuable lessons and benefits. Multidisciplinary and combinatorial skills, including the ability to use different areas to solve complex problems through teamwork; development of information systems; thinking aimed at discovering innovations.

The role of modern leaders is to use appropriate tools to analyze and predict the impact of the business environment and change in the organization, as thinking practitioners and researchers.

6. Conclusion

The digital transformation of the company is a process that provides it with a competitive advantage. It is possible and effective by involving all employees in the process, led by digitally literate leaders at all organizational levels. This requires a digital strategy for organizational leadership that leads to staff transformation, new markets and higher profits. The new paradigm for management achieves a connection between: strategy, structure and culture of the organization.

In this sense, when adapting to new circumstances and in the process of changing the strategy, managers need to consider:

- The leadership approach - leaders must fully understand the changes and their benefits, how the change affects the employees in the organization.
- Project management - strategic business planning, operational planning and setting individual goals and planning, combined with clear communication and coordination between all employees in the organization.
- Intra-company communication and relationships with external stakeholders - everyone needs to know what is happening in the organization and how it affects the work process and customers.
- Management of people in the organization - which groups of employees are affected by the change, what are their reactions, to what extent they oppose and what are the reasons for the tone, what is the strength of influence and impact of management to implement the change.

A positive approach to the manager confronts him with the responsibility to be proactive and look for potential in their own

strengths and opportunities for their development as a constructive approach to the limitations of their own imperfections and threats to their own leadership identity. This approach does not justify his personal limitations or weaknesses, nor does it mitigate the resulting force of the negative effect of threats to the organization. The managerial deficit falls outside the scope of the current study, but there is great potential for future research on the lack of motivation and aspiration to achieve digital literacy. It is necessary to study the impact of the lack of such literacy on organizations and their employees.

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