THE NATURE OF WORK: TRENDS, CHALLENGES, AND OPPORTUNITIES

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Abstract: In just 20 years digitalization is growing faster than any innovation in our history. Not only developed countries that has have benefited from digitalization, about 50% of the population in developing countries has benefited from digitalization and has had transformed their societies.
In the world, the technological revolution is causing significant changes in the nature of work. Some jobs are at risk of being lost to machines, others are being transformed and new ones are being created and the need skills are also changing.
Digitalization is one of the most common themes nowadays and the technologies associated with this concept will be amplified by each other as they develop.
The changes that digital transformation is bringing are radical, comprehensive and as such, they affect workplaces as well. The digital workplace should coordinate technologies, processes and people and that is performed through the integration of information technologies into all areas of a working. Theoretical research often does not clearly define the term nature of the workplace and often overemphasize only the benefits while omitting the challenges presented by the digital workplace implementation.
Therefore, the paper presents the nature of the workplace requirements and use of digital technologies in the companies in North Macedonia and it can see that nature of the workplace in companies across our country is undergoing significant transformation, according to the presented results from the survey. This highlights the dominant trends and characteristics of the nature of work, growing presence of digital technologies, flexible work arrangements, and an employee well-being. The data suggests that for the most of the respondents predominant is the mental work. Because employees are increasingly adopting modern, collaborative, and dynamic structures that promote innovation and productivity. However, challenges such as resistance to change, adaptation to new technologies, and balancing work-life integration remain prevalent. Understanding these evolving workplace dynamics is crucial for companies in North Macedonia aiming to stay competitive and foster a supportive and efficient work culture.

Keywords: digital transformation, human resources, companies, nature of work, mental work, physical work.

1. INTRODUCTION

The nature of the workplace is changing constantly and have a significant structural transformation. Traditional work, is gradually being replaced by more flexible working arrangements and technology is the main driver of these changes. Each new era brings new technologies such as digital platforms, artificial intelligence (AI), and progress in communication and work practices that change work habits, conditions, and employee demands. As technology go forward, work continues to advances, creating new opportunities and challenges for future employees. While technology makes easy growth of the "gig" economy and outsourcing of work, it also brings challenges related to job security, labor force rights, and social inequality. The nature of work especially changed during the Covid-19 pandemic. It led companies to adopt and implement new ways of work, changing the structure of how work is done. These changes affected employee productivity, highlighting the importance of remote work and encouraging managers, especially HR professionals, to provide support. For a company to be successful, it must increase its profit and to increase its employee satisfaction.
At the beginning of human history agriculture was crucial for the survival and development of humanity and jobs were closely tied to agriculture, most people worked as farmers, hunters, or fishermen. The social structure was relatively simple and all tasks were based on physical work. Later, with the beginning of the Industrial Revolution, the nature of work was transformed with the appearance of new machines and technologies that increased production efficiency and created new work places. Local craftspeople were replaced by labor force in factory that operating on the machines and the working conditions were often harsh, with long hours and low wages. With the emergence of computers and information technologies, the nature of the workplace continued to develops. The new computer programs, high automation and AI began to replace employees in many sectors, but at the same time, they created new jobs in IT sector, engineering, and services. Work places began to change from physical work to office work and administrative roles. Also, globalization brought new opportunities for outsourcing jobs to countries with

lower costs, and technology enabled fast communication via the internet, allowing remote work. Started to show up new forms of work, such as freelancing and the "gig" economy where labor force work on a project or contract basis.

Today, the new jobs are expected to require a highly skilled workforce capable of working with emerging technologies such as AI, robotics, and big data. The change in the nature of work will lead to the need for new company strategies, labor force retraining, and regulation of jobs. Employees will have more flexibility in terms of working hours and location, but also face new challenges regarding job stability and social benefits. Research shows that the number of jobs requiring mental skills, such as creative thinking, analytics and information management, has significantly increased compared to those focused on physical work (World Development Report 2019). According to Autor (2015), automation replaces routine physical work but creates new roles that require flexibility and adaptation to new technologies.

2. LITERATURE REVIEW

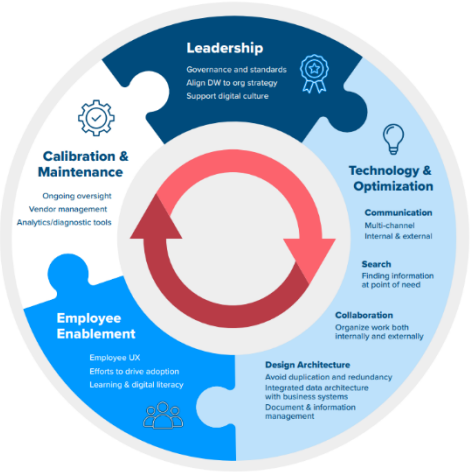
The fast way of adoption of a digital transformation, especially after the Covid-19 pandemic, has been a key factor in the development of remote work and the transformation of the nature of workplaces, revealing significant inconsistencies in IT infrastructure, workforce planning strategies, and the need for the development of digital skills. According to Gartner (Moore, 2020), only one-third of employees would choose the office space as their preferred workplace, and nearly 48% of employees would continue working from home, that will continue to function after the pandemic ends. According to data from Simpler Media Group (2024), from 2017 to 2024, companies with a defined strategy for digital workplaces showed an increasing trend compared to those without a defined strategy (Picture 1). The continuously evolving digital workplace combines leadership, culture, technology, and practices to deliver critical results that impact both operational efficiency and employee engagement (Simpler Media Group2024) (Picture 2).

Picture 1: Implemented digital workplace strategy or program

Answer	2017	2018	2019	2020	2021	2022	2023	2024
Yes	46%	54%	65%	72%	84%	86%	89%	88%
No	54%	46%	35%	28%	16%	14%	12%	11%

Source: Simpler Media Group, 2024

Picture 2: Defining digital work place



Source: Simpler Media Group, 2024

According to Attaran et al. (2020), the digital workplace links technological solutions that connect people, processes and information, eliminating the barriers between them. They also note that by removing these barriers, employees will become more competitive and efficient in the labor market. Additionally, Lestarini et al. (2015) emphasize that the digital workplace synchronizes technology, processes and people. According to them, the main characteristic of

the digital workplace is achieved through the integration of four key technologies: mobile solutions, big data, cloud computing and search tools.

According to, Attaran et al. (2019) they identified a framework for the digital workplace (Picture 3) that includes three pillars: personal performance, team performance and organizational performance.

Picture 3: A framework for the digital workplace

Source: Attaran et al., 2019

Companies cannot function if they do not maximize the use of the information they possess, but cannot find, nor the expertise of employees they have, but cannot identify.

Creating digital workplaces involves implementing a wide range of software tools that support business processes within the organization. Therefore, the digital workplace cannot be viewed as a combination of software tools, because strategy that relies only on tools is incorrect. The digital workplace changes not only how tasks and processes are carried out, but also the relationships within the organization, leading to a complete transformation of the work experience (Meske & Junglas, 2020). Although the digital workplace is largely viewed in a positive context, emphasizing its benefits and advantages, but should not be overlooked the organizations challenges during its implementation.

Attaran et al. (2019), and Lagus (2020) in their research summarized the benefits of the digital workplace for company and employees (Picture 4).

Picture 4: Benefits of the digital workplace

Benefit	Employee	Organisation
Empowers employees with a richer IT experience - flexibility and personalization: modern digital platforms are mobile-first designed and primarily employee-centric.	✓	
Provides a consistent user experience across all devices	✓	
Raises employee engagement	✓	
Helps employee experience greater flexibility and choice	✓	
Helps to improve employee and customer experience	✓	
Enables access to expert knowledge and discovery of project-critical information	✓	
Improves communication interfaces and collaboration	✓	
Enables agility	✓	
Prevents time wasted in recreating information that already exists	✓	
Reduces employee absenteeism	✓	
Decreases staff turnover.		✓
Enable secure access for users, from anywhere at any time. Provided online communication, access to tools and corporate information, regardless of location and time.	✓	
Supports closer collaboration with customers, partners & co-workers	✓	
Accelerates decision-making and innovation		✓
Provides more effective ways of working – Increases productivity: modern platforms of the digital workplace provide highly personalized information, and access to the required information is improved by searching and delivering localized content.	✓	✓
Speeds up the release of new products and services		✓
Provides efficient information distribution channels		✓
Strengthens talent attraction and retention. An innovative environment will attract and retain the best employees.		✓
Prevents information overload		✓
Reduces sales cycles		✓
Exploits consumer-oriented styles and technologies		✓
Increases the chance of a project successfully meeting its outcomes by using cross-functional teams		✓
Facilitates technical improvements including better performance, platform support, improved security, etc.		✓
Enables environmental gains due to a reduction in travel (thereby improving the carbon footprint)		✓
Leads to changes in the work styles of employees that enable more transparent work		✓
Reduces waste by removing distractions and time wasters such as inefficient meetings, managing emails, searching for people and information, and re-creating work that has already been done	✓	
Improves feedback and performance management: modern digital workplaces enable continuous monitoring of employees.		✓

Source: Lagus, 2020 based on the work of Attaran et al., 2019

To achieve macroeconomic benefits, not just microeconomic savings, companies will need to create digital workplaces that will enable them (White, 2012):

- To reduce the time required for innovation in the development of new services and products.
- To respond quickly to new business opportunities and challenges
- To increase their competitiveness and market value, especially in rapidly growing economies.
- To increase margins from the delivery of services and products, ensuring a return on investment.

Initiatives for these changes should be led and adopted by the company's Board of Directors and managers, in response to the challenges and opportunities of digital transformation. It is certain that new work practices will change advantage of significant technological advancements that will occur in the near future. Future young employees will have high expectations regarding how they can use these technologies for personal development and achieving company goals, with an emphasis on personal development as the top priority.

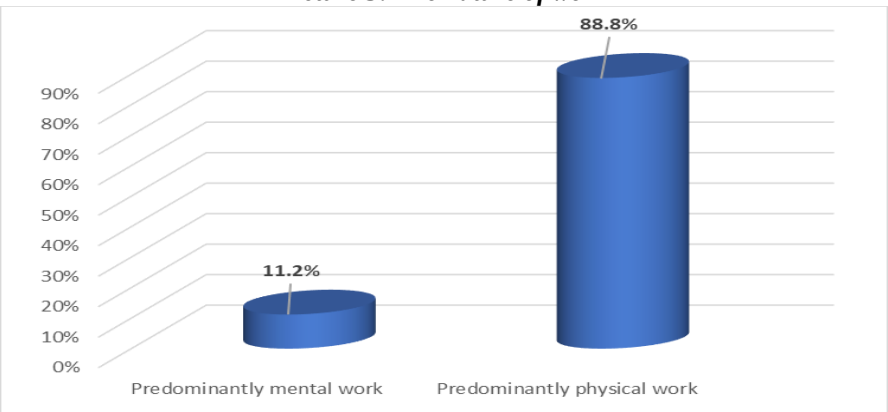
3. THE IMPACT OF DIGITAL TRANSFORMATION ON THE NATURE OF WORK-EMPIRICAL RESEARCH

The aim of this paper is to research the impact of DT on the nature of work. In Google Docs was prepared self-administered questionnaire and questions is created in closed-ended format and a 5-point Likert scale. The model of questions was based on the new technological trend and the questionnaire contained logically connected questions. The questionnaire was sent randomly to 5000 employees in the Republic of North Macedonia, and the response was received from 1000 companies. Most of the employees belong to the Skopje region, belong to the section education and most of them are female, between the age 36 and 45 years and have higher education. Due to the scope of the research, in this paper we will present only the part related to the nature of the workplace.

From the conducted research and the question specifically related to the nature of the workplace, whether mental work dominates over physical work, the data shows that mental work dominates (88.8%) compared to physical work (11.2%) (see Picture 5). In other words, most of the surveyed employees work in positions that require mental work, which is due to the fact that most respondents work in the education sector, followed by administrative and support service activities, and IT. This can be explained by the fact that mental work, which is dominant in the survey, typically involves creative and strategic tasks that are difficult to automate. Jobs that require interpersonal skills or analytical capacities are less susceptible to automation and mental work often requires the use of digital tools such as word processors, spreadsheets, and data processing programs, which increases the need for computer skills. Skills for using the internet, communication via social media, and working with software have become crucial for mental work, making this category more susceptible to digitalization but simultaneously less susceptible to complete automation.

From this research, it can be concluded that the labor force is in a phase of significant transformation, where mental work dominates over physical work. This change is the result of advancements in technology, automation, and digitalization, which are changing the demands of the labor market. Now, a most of the jobs are focused on mental tasks such as technology development, data analysis, and managing complex processes. This change in the nature of work also brings new challenges, such as the need for new skills and the retraining of the labor force. With the decline of physical work, new jobs are emerging that require high technical and mental abilities, which calls for investment in education and training. Therefore, the future of work will be increasingly linked to innovations, technology, and flexible work arrangements. It is essential to continue developing human capital through investments in education and adapting work policies to ensure equality and social protection in the new work environment.

Picture 5: The nature of work



Source: authors own research

Employees how work physical work may face a higher risk of their jobs being replaced by automated systems or robots in contrast to mental work, which is more focused on skills involving intellectual efforts, innovation, and information management, making it difficult to replace with technology, especially in areas such as strategy, management, and creative industries. The dominance of mental work, according to the responses from the survey, indicates the importance of developing digital skills, such as internet and software usage, in the context of global trends in automation and AI. This also suggests that jobs requiring physical labor may be more susceptible to significant changes, while mental jobs have greater resistance to automation.

4. CONCLUSION

The results gained from the research, regarding to the nature of the workplace and related aspects such as job being replaced by computer software or AI, clearly show significant differences in the nature of jobs and the skills required. When mental work dominates the importance of digital skills and digital technology becomes increasingly significant. Respondents working in such positions most often use the internet, social networks, and productivity software, which increases their addiction on technology in their daily work.

This also highlights the importance of education systems and training adapting for the development of digital skills and critical thinking. Since mental work involves more intellectual skills is less likely to be replaced by robotics and AI. This can be explained by the fact that IT systems and automation are increasingly applied in industries based on physical work, such as manufacturing and logistics, while mental work often requires creative and strategic solutions that cannot be easily automated.

However, this does not mean that mental work is completely resistant to automation. With the development of AI and machine learning, some areas such as data analysis, decision-making, etc., are already beginning to be under the impact on technology. As new technologies develop, jobs will evolve, and those who do not adapt to new skills may be left behind. On the other hand, physical work, despite the fact that a smaller portion of the respondents belong to this group, is still important in some industries. These jobs face a higher risk of automation, which will lead to significant changes in the structure of the labor force in the future. It is important to consider methods for preparing employees for the new skills and new positions that will emerge as a result of these changes.

In the future, employees will be required to adapt to new technologies. The need for digital skills, data management skills, and creativity will be key to the success of employees in the coming decades. Educational institutions need to adapt and provide appropriate training and retraining programs for employees already in the labor market. Additionally, mental work will be crucial for innovation in many industries. The demand for creative solutions, new products, and services will drive economies. Promoting innovation and entrepreneurship will be an important factor in creating new jobs that are not only dependent on physical work but also on solving complex problems and creating new value. It is important to ensure that the workforce is prepared for the new challenges and has access to training and education. Governments and companies need to invest in creating inclusive training programs that support the development of new skills, particularly for employees from less developed countries or industries. In the future, the labor market will continue to evolve, and the key skills for success will be those that combine technical knowledge with creativity, innovation, and the ability to adapt to new technologies.

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