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KEY IMPACTS OF DIGITAL TECHNOLOGIES ON THE WELL-BEING OF THE WORKING ENVIRONMENT

Daniela Todorova
Todor Kableshkov University of Transport, Sofia, Bulgaria
https://orcid.org/0000-0002-6235-9989

Bistra Georgieva
Todor Kableshkov University of Transport, Sofia, Bulgaria

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Abstract

Digitalization implies the continuous adoption and use of digital technologies in social and human activities. That process requires significant changes and forces people to use digital technologies during and after digital transformation. Digitalization promotes process management, optimizes public space, and brings practical benefits to all. The fast development of digital technologies is undoubtedly responsible for many positive effects on human life in all aspects - education, professional realization, everyday life, and progress in all areas of human activity. However, the excessive use of digital technologies, like the use of any other good beyond what is necessary and sufficient for the goals of a specific activity, has accentuated the negative effects. They become especially visible during the COVID-19 pandemic. As a result of digital overload and excessive use of information and communication technologies, we observed a significant decline in communication skills and capacity for live communication. That inevitably affects the atmosphere within the organization and the communication of organizations with their employees, clients, counterparties, and partners. This article talks about the most significant impacts of digital technologies and their impact on the comfort of the work environment.

Keywords*: digitalization, digital, well-being, working environment, impacts.*

1 INTRODUCTION

Digitization supports process management, optimizes public costs, and brings practical benefits to everyone.

Address of the corresponding author:
Daniela Todorova
dtodorova@vtu.bg

Information and Communications Technology (ICT) has changed people's lives and working conditions. Nowadays it is easier than ever to travel, communicate, and connect with people worldwide through one click only.

The development of information and communication technologies at the speed of light allows humanity to learn, produce, invent, and achieve faster and easier than at any other

moment in history. It makes any knowledge, information, and resources accessible immediately and thus gives us the ability to make life and this world a better living place.

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ICTs are everywhere around us in a household, the office, transportation, education, and healthcare. They are just around the corner waiting for us to take advantage of them. The impact of digitization on doing business is analyzed in more detail by Bogavac, Prigoda and Cekerevac (2020). Digitalization was extremely useful during the COVID pandemic making the educational process possible and helping people to do their job from the couch or the dining table at home. ICT influence life so deeply that it's inconceivable to maintain a such high quality of life without them.

Paradoxically technologies help us to communicate practically unlimited but the bigger the quantity the lesser the quality. While pretending to communicate with others it gets more and more difficult to establish the most important bond in human life – the one with our beloved people and even more importantly – the one with ourselves. Technologies create so much buzz in our minds that it gets harder and harder to even notice our thoughts, reflect on our own experiences acknowledge and process our own emotions, and express ourselves and our thoughts and ideas.

Ironically while giving us access to the knowledge, art, and information from the whole history of the human species technologies tend to limit our creativity as it seems almost impossible to create something original or completely new.

Furthermore, ICT gives us the feeling that we can get and achieve whatever we want in the blink of an eye. That it's not necessary to make long-lasting efforts because we only need to click here and there, and we can get everything. We've lost the notion that the greatest things take time. Making ourselves and our path in life and being, takes time, effort, and persistence.

And persistence is what is most needed in every human activity – education, sport, healthcare, career, and science.

Lack of persistence is one of the key problems of the Millenials who face difficulties staying in a job position for more than a few months because they need to see the impact, they make. The problem is that a few months are quite a short time to make an impact, especially in large companies or structures. Sometimes a few months is not enough time even to get through all the inner pieces of training of the specific organization. (Sinek, 2020)

2 DIGITAL WELL-BEING AND SUSTAINABILITY

In Bulgaria, businesses and the entire economy are facing the Digital Era. Every modern business needs to balance growth, risk-taking, and providing staff accordingly. The introduction of technologies increases productivity and guarantees business planning which leads to the lowering of possible risks. At the other end of this spectrum are consumers and enterprise employees. It is important to note here that ease of access intersects with productivity when an enterprise introduces and implements some new technologies, as well as the improvement in the quality of life that they bring.

Digitization means the use of digital technologies and data (fully and relatively digital) to generate income, improve business, replace/transform business processes (not simply through their digitalization) and create a digital business environment in which digital information is the basis.

In Bulgaria, in terms of business, digitization most often refers to the resolution, and improvement of business operations, business functions, models, as well as other activities through the application of the mechanisms of digital technologies and their wider use in the context of digitized data. That requires the digitization of information, but the latter is more important and based on data.

The second aspect often mentioned, digitalization we understand as a specific *environment* in the

field of business. For example, digital jobs. Often, by working in such an environment, we strive to keep the use of paper to a minimum, but the digital work environment encompasses also other things.

Its use means that the workforce works differently, using tools such as mobile devices and other technologies that allow employees to be mobile and use communication platforms. This, on the other hand, creates many possibilities for a different course of action and requires more than the simple availability of digitized data. The process of digitalization requires a major change, which is why many people use digitalization and digital transformation interchangeably.

Digitalization leads to the continuous adoption and use of digital technologies in all social and human activities. In Bulgaria, the increasing number of digital users, the development of digital healthcare, the growing digitalization of government services, marketing, and consumer services, and others, led to the overall digitalization of services in all possible spheres.

3 MAIN IMPACTS OF DIGITAL TECHNOLOGIES ON THE COMFORT OF THE WORKING ENVIRONMENT

The vigorous development of digital technologies is deserving undoubtedly of the many positive effects they have on human life in all its aspects – in education, professional realization, daily life, and the progress of all areas of human activity. But its overuse as the overuse of any other good beyond the necessary and enough for the goals of the specific activity has emphasized negative effects that became especially visible during the COVID pandemic. One of the ways for coping with the COVID-19 restrictions was increased usage and application of digital technologies that allowed many people to do their job from their living place and not from their working place.

The positive effect of this solution is expressed in flexibility concerning working time and place which made it possible to save the job for many people and prevented the closure of businesses that are hospitable for this kind of versatility. But a lot of impacts of another, more negative character occurred.

The abundance of all kinds and quality of information, its easy and fast availability, presence, and opportunity to use all possible digital applications and tolls make multitasking more common than ever. In its essence, multitasking is executing several different or of the same kind of tasks with the intention and assumption that this will save time and will increase the productivity of labor measured in the number of tasks completed per unit of time. But what happens is that even in similar tasks we constantly shift from one task to another which tires and damages the human brain, worsens its function, and achieves the effect of decreasing efficiency and quality of work done.

A similar effect is context-switching — quickly switching between different types of tasks and work modes. It is somewhat normal given the dynamics of work activity, but the situation is exacerbated when social media, instant messaging applications, e-mails, and increasingly video conferencing tools introduce into everyday and professional life. One can be impressed with high productivity, but context-shifting takes brain resources so huge that virtually there is no time and space left for deep thinking. Thinking is the essence of some old professions, and in the recent past, it was considered that it will also be the essence of all future prosperous careers.

The result of these two phenomena for employees is the more and more widely spread emotional burnout and drastic increase of stress levels in the physical and psychological aspect that can lead to a durable inability to do their jobs and other kinds of value-producing activity. That inevitably impacts both the social function of the individual and his/her performance at work so, therefore, it has economic consequences.

Another consequence of digital technology overuse is gaining the belief that results are easy and fast achievable without much effort which creates especially in young people limiting persuasion that there is no need to make consistent systematical purposeful efforts as well as a lack of patience.

As a result of digital overload and overuse of informational and communication technologies, significant decay in communication skills and capacity for live communication is observed which

inevitably impacts both the intra-organizational atmosphere and communications of organizations and their employees with customers, counterparties, and partners.

The main consequences for the physical health of employees because of digital overload are stagnant life with all arising from it negative effects (decreased motor activity, unhealthy weight increase, deteriorated general condition, headache, exhaustion, etc.). The deteriorated eyesight because of long exposure to light-radiating devices is distinctive of digital overload and often one of its first symptoms is a headache and dry eyes.

The main apprehensions of employers and employees regarding the impact of digital technologies on physical and mental health at the workplace relate primarily to a decrease in productivity and quality of work done, and potential negative consequences over physical health in the first place. We cannot see the negative effects on mental health immediately, because their emergence takes more time, they stay in the background while we address the consequences of digital overload.

4 DIGITAL TECHNOLOGIES AND IMPROVING DIGITAL WELL-BEING IN THE WORK ENVIRONMENT

It is typical in recent years that labor relations have developed exclusively dynamically, and the labor market gets more and more flexible. More and more employment contracts are in non-standard forms and over half of all new working places fall into this category. Digitalization also contributes to the creation of "new forms of employment".

New forms of employment are challenging for knowledge and practice and for the way of understanding and regulating the labor market. The growth of new forms of employment can be considered a purposeful practice and strategy of employers. New forms of employment spread out in certain economical sectors with seasonal fluctuations, for example, agriculture, construction, and the non-typical until now aircraft and telecommunications industries. Many companies use "new forms of labor" to meet specific short-term needs of the workforce.

Technologies are one of the most powerful factors that determine the development of some of the fast developing “new forms of labor”.

The development of work through online platforms, crowdsourcing, and mobile work is due to some of the following technologies:

- *Cloud technologies* enable access to information, data, processes, control, and joint activities of workers and others. From this point of view, the cloud represents not only an engine for the growth of all forms of remote and virtual work but also, a valuable tool for implementing outsourcing and offshoring strategies, especially in the IT services and call center industry.
- *Large Databases*’ storage and processing capabilities enable user, employee, behavior profiling, modeling, motion tracking, interaction mapping, and diagnostics from automotive to human disease. From a work perspective, the collection and analysis of big data have implications for monitoring work-process and the workplace and tracking employee activities
- *Mobile applications* - Most platforms have mobile applications that can be downloaded on smartphones and tablets. They allow access to work, services, information, and data and provide an easy and efficient way to operate and communicate from different points and times of basic work processes and groups of people.
- *Geolocation technology* is suitable for identifying the geographical location of people, goods, services, and processes. From a doing business perspective, geolocation has a significant impact on the planning, monitoring, and tracking of mobile workers. They are also suitable for making deliveries, performing maintenance, repair, and inspection operations in industrial plants, and conducting site visits, as well as the ability to track processes, goods, and services from the persons that can have an impact on the organization of work in various sectors. The combination of geolocations with other new digital technologies such as big data, applications, the Internet of Things, online platforms, and peer-to-peer networks

represent a particularly rich source of innovation.

- *The Internet of Things (IoT)*, an organized set of communication protocols and operating systems, enables the exchange of digitized data between objects (physical or virtual) equipped with sensors, telemetry tools, chips or QR codes, and applications embedded in the hardware of computers, phones or robots. When relevant interoperability conditions are met on common technical standards, miniature interconnected objects can play a significant role in:
  - the work environments (component and product tracking, employee tracking, sales tracking, access control),
  - public spaces (city traffic, public transport, water supply, waste management), and
  - private spaces (home automation, digital clothing, sports equipment).

  The application of IoT in smart cities is discussed in detail in (Čekerevac, Prigoda, & Bogavac, 2020).
- *Connecting objects* increases their potential to create value because services can be embedded in them, and data can be mined from them. From a work perspective, the changes that are occurring are related to the management of the flow and availability of goods, services, and people in all sectors of industry.
- *Self-learning* systems and mobile robots – By definition, a robot is a programmable automaton with feedback capabilities, ie. the ability to adapt to changes in the environment. Improvements in these feedback systems are therefore not a truly new development, but the new generation of robots is characterized more precisely by their learning and perception skills. Self-learning systems build on recent years of advances in computing power and memory (big data, electronic vision, shape, and speech recognition) to adapt their behavior based on their knowledge of past events and analysis of their environment. From a work perspective, the impact of developments in these areas will not be limited to sectors with a history of automation but will cover a wider range of tasks, including goods handling, maintenance, and repair of industrial plants, waste management, spare parts, parcels, and letters, restocking and performing operations in hostile environments. It is an integral part of the processes of restructuring production (Industry 4.0).

The described technologies and digitization are already having a profound impact on both existing organizations and emerging entities. Their impact on new working methods, for example, the rapid penetration of remote employment in many sectors, is a phenomenon that is gaining momentum. According to a recent Eurofound study, within the EU-28 on average around 17% of employees are remote or mobile workers in the field of information and communication technologies (ICT). The increase in the number of remote and mobile workers obliges the social partners to find new ways and innovative methods to reach these workers who are not physically present on the premises of enterprises. (EU, 2019)

5 MEASURES FOR IMPROVING DIGITAL COMFORT IN THE WORK ENVIRONMENT

5.1 Policy level

Professional comfort in general and the digital belong to additional benefits of a job. The Bulgarian state policy hardly covers the minimum engagement and care for employees. That is why organizations have absolute independence and rely only on their initiative to develop and implement strategies and programs for professional and digital comfort.

Given the structure of business in Bulgaria for most of the enterprises which fight for survival on daily basis, especially in the current political and economical situation, such programs are rather the exception and are inherent to foreign companies that operate in Bulgaria, and which possess the necessary financial resources and human capital.

Even laid in hands of the organization public context and public image of digital well-being should be established as a significant element of human well-being in general in which time, efforts, and motivation of employees should be invested. We should analyze the benefits of digital

transformation and potential risks simultaneously. (Dzhermanska, 2020)

5.2 Organizational level

At the organizational level, some employers, mainly in the ICT sector, where the specific operations contain an inherently high risk of digital overload, applied corporate strategies and programs for employees' well-being (Andonova, 2022). They include a series of actions contributing to digital well-being and the prevention and limitation of consequences of digital overload.

- Allocation of recreation areas, including sports facilities and green spaces, where employees can relax, recharge, and take a little rest tuning to the new contexts and tasks that constantly emerge.
- Building and application of inner process management systems and time management systems allow the limitation of the necessity of and avoiding multitasking.
- Building and maintenance of an organizational culture that creates prerequisites for limitation and/or overcoming stress caused to digital overload by motivating employees to participate in activities away from the screens., for example, sports, hobbies, casual communication, clubs of interests, etc.
- Limit or ban the usage of devices during work meetings, meetings with clients, and any other kind of direct communication.

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One can analyze professional well-being at the employees' and organizational levels. As the initiative for taking care of the professional well-being of employees has been laid down as the responsibility of employers it is not well communicated at the political level. The state does neither limit nor regulates any kind of activities related to the professional well-being of employees. Government supports it through various programs funded by the European Union (for example Operational Program Human Resources Management) allowing opportunities for qualification improvement and different pieces of training, courses, and informal education. That contributes to the most important value related to professional well-being according to a study of professional happiness conducted by Milen Velikov (2021) and namely opportunities for professional improvement.

The following structure of the main factors that impact the overgrowth of happiness in the professional aspect is defined through a questionnaire survey.

- To develop own capacity and skills - 68.8%
- To have diverse and interesting life - 58.7%
- To inspire others - 57.1%
- To have free time for own interests - 56%
- To have flexible working hours - 50.8%.

These answers can be very usable and help both employers and employees. The employer needs to unify the values and behaviors of the company with what makes people happier and more fulfilled. It is favorable if the manager himself shares these and similar principles for professional happiness by showing, sharing, and tolerating them. It is necessary to show that he is a leader – to be a model to be followed and imitated, to have his aspirations, mindsets, and expectations. Because very often the employer is a kind of role model whose example is copied by the employees. (Marinova, Todorov, & Shopova, 2022)

If managers embody values like growth, leadership, diversity, flexibility, and balance between work and personal life employees are likely fulfilled.

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Expectations of the employees themselves relate to different wishes and mindsets – someone to develop them, to give them higher and different positions. Each one of these factors for greater happiness in the professional aspect as a quest can be satisfied in the work and can be developed out of it. This relates to additional efforts that create opportunities. New knowledge and skills that accelerate chances. Each of us has experienced professional happiness. That is why it is crucial to know what happiness is and what its

components are and to search for its meaning for us. (Todorova & Marinova, 2018).

It is impossible to limit digital well-being only to professional well-being due to deep penetration and even the human life takeover by ICT technologies. This transfers digital well-being to the field of intervention of getting more and more popular coaching – a process of training and development in which a specially trained coach or mentor helps the person to achieve his own personal, professional, and life goals. Law did not regulate education in coaching and its practice, and they are executed and monitored by different non-government organizations.

All programs for the human resources management experts training and single courses in other programs can be helpful for organizations and companies while managing the digital well-being of employees at the workplace.

Sample topics to be included and implemented in existing programs or to be included in brand new programs especially aimed towards digital wellbeing are:

- Measurement of digital overload
- Self-reflection on digital well-being – monitoring and self-assessment
- Building healthy habits for digital life management
- Motivation for digital life management
- Digital life of employee – factor for performance and development of the organization

Sample lapses in skills and needs of training of these professional profiles

The most significant mistake that can appear in the training of digital well-being managers is to assume that a certain model or system can prevail over the specific needs and characteristics of a particular employee. The next is that the method is more important than the person applying it or the person to whom it is applied. Professional well-being in general and the digital one are strictly individual to the degree of uniqueness for every single person and each program for their achievement should consider this specificity.

6 CONCLUSION

Digital well-being is the development of skills and habits for the healthy and beneficial use of informational and communication technologies in a way that favors and does not harm the quality of life, productivity, and relationships. It helps us use them in a way that drives us up following the set goal without distractions. In its essence, it is a way that allows us to control technologies to take advantage of their potential.

Healthy and balanced relations with technologies have several benefits for the general well-being of employees and organizations. The many helpful uses and the comfort that technologies give can make it very hard to set boundaries in technology use although it is a prerequisite for emerging negative consequences. Their prevention is related to establishing positive habits for ICT technologies' moderate use. There are a lot of tools that help to establish this kind of habit – from inner systems for screen time monitoring to applications for smartphones that monitor different indicators – screen time, how long we use each application, and allow the limitation of device use. In this process, the major role has the digital well-being manager.

The more important task of a digital well-being manager is to help employees realize and accept the necessity of purposeful efforts in the direction of reasonable and controlled use of technologies aiming to prevent digital overload and its negative consequences. The next step is creating sustainable motivation in employees to work and to take care of their digital well-being it is possible only under the condition of their active and engaged participation.

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