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Digital workplace – advantages and challenges

Дигитално радно место – предности и изазови

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Abstract: Digital transformation is performed through the integration of information technologies into all areas of a business. The changes are radical, comprehensive and as such, they affect workplaces as well. Many authors overemphasize the use of technologies and regard them as central to the digital workplace. On the other hand, the position of the authors who argue that the digital workplace should coordinate technologies, processes and people is more correct. Theoretical research often does not clearly define the term digital workplace. Furthermore, the studies often overemphasize only the benefits while omitting the challenges presented by the digital workplace implementation. Therefore, the paper presents the requirements for a workplace to be considered digital, its advantages and challenges, and it shows how to balance the positive and negative repercussions of workplace digitalization.
Keywords: digital workplace, digital transformation, advantages, disadvantages.
JEL classification: M15, O39

Сажетак: Интегрисањем информационих технологија у све области пословања врши се његова дигитална трансформација. Промене су корените, свеобухватне и као такве, имају утицаја и на радна места. Многи аутори у оквиру дигиталног радног места пренаглашавају употребу технологија те технологије постављају у централно место. Са друге стране, исправније је становиште аутора који истичу да дигитално радно место треба да координише технологије, процесе и људе. Теоријска истраживања често не дефинишу јасно појам дигиталног радног места. Такође, радови често превише наглашавају само предности истовремено изостављајући изазове које имплементација дигиталног радог места носи. Због тога је у раду приказано шта је потребно да би се радно место сматрало дигиталним, које су његове предности и изазови и како успоставити равнотежу између позитивних и негативних реперкусија дигитализовања радних места.
Кључне речи: дигитално радно место, дигитална трансформација, предности, недостаци.

ЈЕЛ класификација: M15, O39

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Introduction

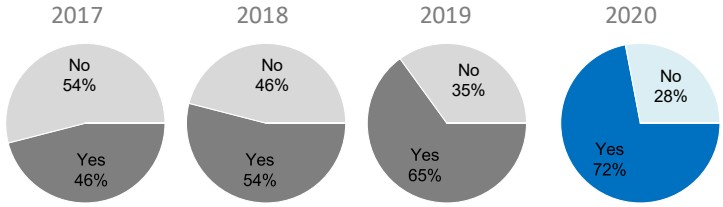
The Fourth Industrial Revolution, often referred to as Industry 4.0, introduces increasing challenges to organisations. Organisations operate in a "volatile, uncertain, complex and ambiguous" environment (Brahma et al., 2021). Technology has an impact on entire organisations but also on workplace. Meske and Junglas (Meske & Junglas, 2020; Meske, 2019;) point out that scant attention is paid to the micro level of digital transformation of the workplace, i.e. the environment of an individual who performs the work including the tools that support or hinder that work. According to Jeffrey Mann (Mann, 2019), "you cannot become a digital business unless you have a digital workplace", i.e. a digital workplace is a 'must-have' practice (Haddud & McAllen, 2018). Office work is becoming less routine and repetitive, and more knowledge-based. This term, *knowledge-based*, was introduced by Peter Drucker (mentioned by Berg & Gustafsson, 2018) to describe such workplaces but also employees whose main asset is their knowledge. Workers employed in *knowledge-based* workplaces are *knowledge workers*.

In performing work by knowledge workers (but not exclusively by them), timely access to relevant information is a condition *sine qua non*, wherein ICT technologies are of determining significance. They have increasing requirements regarding the implementation of modern technologies in the workplace (Zrinscak, Perl, & Robra-Bissantz, 2017). Notwithstanding the previous statement, Attaran, Attaran and Kirkland (Attaran, 2019) point out, however, that technologies alone cannot solve certain business issues. Therefore, organisations should equally focus on the skills and knowledge of employees, the lack of which make technologies (almost) worthless, and in some cases technologies can even have a negative impact (Hicks, 2019). The views expressed are particularly important in the context of digital workplaces.

Even though companies might have had reservations concerning digital, relocated, virtual workplaces before the COVID-19 pandemic, it is certainly different now. It is high time to design/redesign workplaces to support all forms of interaction whether direct or remote between employees (de Lucas Ancillo, del Val Núñez, & Gavrila, 2020). According to some data, (only) 15% of employees worked from home before the pandemic. At the beginning of the pandemic, this percent was increased by additional 35% (Deloitte, 2020). Similar data can be found in the work of de Lucas Ancillo et al. (2020), where only 3% of office space was considered flexible in the USA prior to COVID-19 (option to work in and out of the office), but now this percentage is projected to range between 20 and 27%. Here lies the potential to reduce estate costs from 30% to as much as 100% for completely remote jobs. Acceleration of digital transformation is a driver of remote work and the workplace transformation, and it reveals important gaps in IT infrastructure, workforce planning and digital skills development. The report published by Simpler Media Group (2020) specifies a great challenge for people who worked remotely during the pandemic to return to their offices, taking into account the fact that 60% of workers who switched to remote work point out that they have achieved a better work-life balance, i.e. 74% of workers want to continue working from home even after the pandemic ends. Similar predictions were made by Gartner (Moore, 2020) in 2019, stating that only a third of

workers would choose the corporate office as their preferred place to work. According to the data presented by the same company, almost half of the workers (48%) will work remotely to some extent post-COVID-19 (Moore, 2020). All this imposes the need for a strategy for implementing digital workplaces even beyond the pandemic, as shown in Figure 1. In the total number of surveyed companies during the 2017-2020 period, as showed below, a growing trend can be observed for companies with a defined strategy of digital workplace as opposed to companies without a defined strategy (Simpler Media Group, 2019, 2020).

Figure 1: Implemented digital workplace strategy or program



Source: Simpler Media Group, 2020

The same research (Simpler Media Group, 2020) specifies five main priorities of the digital workplace: integrated digital workplace environment, process digitalization and improvement, culture and change, big data (advanced analytics and decision-making support) and standardization of tools and processes.

The available literature lacks consensus on the definition of a digital workplace. On the one hand, some authors (over)emphasize technology, but on the other, many authors regard technology only as one of the (key) elements of the digital workplace. Numerous advantages presented by the digital workplace are evident and they are (too) often in the foreground, while the challenges and negative consequences of the digital workplace are often neglected. Therefore, the paper focuses on the digital workplace viewed through the prism of various factors that make it up, as well as the advantages and challenges imposed by the digital workplace.

1. Digital workplace

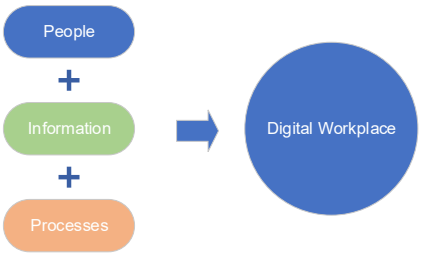
Authors define the digital workplace differently, often overemphasizing technology. Hamburg (Hamburg, 2020), for instance, points out that "the digital workplace includes all digital technologies and services people use to get work in today's workplace – both those which already exist and ones to be implemented". Besides core business applications, the author's definition encompasses e-mail, instant messaging, social media tools, and virtual meeting tools. On the other hand, Attaran, Attaran and Kirkland (2020) stress that some organisations are incorrect in believing that e-mail and social media are the only necessary tools for the digital workplace and that digital transformation is a mere integration of digital

technologies. The same authors emphasize the claim that most efforts in digital transformation fail due to inadequate corporate culture.

Williams and Schubert (2018) explored definitions of the digital workplace and identified three thematic categories: 1) organisational strategy and design, 2) people and work, and 3) technology platform. The first thematic category, Organisational strategy and design, sees the digital workplace as part of a coordinated organisational strategy for changing culture, and creating a new workplace that will support collaborative and flexible work. The strategy should be adaptive and future-oriented, and at the same time compliant with the relevant laws and regulations. The second thematic category identified, People and work, relates to the need to enable employees to be productive, which is accomplished by meeting user's needs for data, information, and knowledge. These authors attach specific emphasis to supporting information work, knowledge work, employee engagement, collaboration, and information sharing. The third thematic category, Technology platform, emphasizes the need to implement an integrated platform that provides the tools and functionality needed to support employees. This platform should be integrated with other systems and services, and independent of location. Based on the thematic categories they had specified, Williams and Schubert (2018) finally defined the digital workplace as "an integrated technology platform that provides all the tools and services to enable employees to effectively undertake their work, both alone and with others".

According to Attaran et al. (2020), the digital workplace encompasses solutions that create connections and remove barriers between people, information and processes (Figure 2). The mentioned authors believe that by breaking down barriers, workers will do their job more efficiently and more agile. Similarly, Lestarini, Raflesia, and Surendro (2015) stress that the digital workplace coordinates technology, processes and people. They emphasize that the desired feature of the digital workplace is achieved by integrating the following four types of technologies: mobile, big data, cloud computing and search-based applications.

Figure 2: Breaking down barriers and creating connections



Source: Attaran et al., 2020

As mentioned earlier, technologies should not be the exclusive way towards the implementation of the digital workplace, but a more holistic approach is needed, which will take into account all the perspectives of the digital workplace. In this respect, Attaran et al. (2019) identified a framework for the digital workplace (Figure 3) that includes three building blocks: personal performance, team performance and organisational performance.

Figure 3: A framework for the digital workplace

Source: Attaran et al., 2019

According to Constant (2017, mentioned by Attaran et al., 2019), the pillars of a digital workplace are: the agile workplace, digital technology, and collaboration. In the authors' opinion, the agile workplace implies a change of physical workplace primarily through the integration of front and back-office tools. This integration is achieved by carefully designing the infrastructure of adequate technologies. Part of these technologies supports the flow of information through the organisation, which enables and facilitates collaboration between employees. Collaborative technologies should include collaborative platforms, social media tools, intranet, and the Internet (Attaran et al., 2019). These technologies will enable work to be done regardless of time and space constraints, which at the same time often blurs the boundaries between the private and business time of employees (Brahma, Tripathi, & Sahay, 2021; Colbert, Yee, & George, 2016).

2. Advantages and challenges of the digital workplace

Creating a digital workplace involves implementing a large number of software tools that should support business processes within an organisation. Therefore, the digital workplace cannot be observed separately from modern software tools, but as already mentioned, the strategy of relying solely on tools is wrong. The digital workplace causes changes in the execution of tasks and processes as well as in the social relations in the organisation and transforms the entire work experience (Meske & Junglas, 2020). Although the digital workplace is mostly discussed in a positive context, i.e. its positive aspects are emphasized, the digital workplace is not immune to many challenges. The following are the advantages and challenges associated with the digital workplace, as well as suggestions for balancing the characteristics of the digital workplace.

2.1 Advantages of a digital workplace

Digital workplace technologies provide the infrastructure for ubiquitous work (Schmidt, Praeg, & Gunther, 2018), i.e. work regardless of time and location. The most common positive side of the implementation of the digital workplace is the increase in productivity and performance of employees (Attaran et al., 2019; Haddud & McAllen, 2018; Gerten Beckmann, & Bellmann, 2019). Increased productivity can be attributed to various benefits of the digital workplace. One of these benefits is the possibility of internal crowd work,

which, according to Meske and Junglas (2020), can lead to outstanding results and competitive advantages of the organisation. Cost optimization is also one of the advantages of a digital workplace. Haddud and McAllen (2018) give an example of a direct positive impact on costs in which organisations employ workers with the necessary competencies regardless of their location, thus reducing labour costs.

There is a growing need to enable the efficient exchange of knowledge between mobile workforce (Brahma et al., 2021; Kissmer, Knoll, Stieglitz, & Groß, 2018). Mobility provides freedom, autonomy (Gerten et al., 2019) and flexibility in choosing where, when and how to work (Vallo Hult & Byström, 2021), which ultimately leads to greater job satisfaction (Attaran et al., 2019), and thus higher productivity.

Increasing networking and collaboration within the organisation is one of the imperatives set up by a digital workplace. Although digital workplace tools enable and encourage employee independence, they also enable them to stay and become connected to others (both with people from and outside the organisation) (Meske & Junglas, 2020). The digital workplace provides faster access to the required information and employees will be able to meet customer needs faster and thus improve their experience with the organisation (Haddud & McAllen, 2018). This improves involvement and engagement (Md Dahlan, Abdullah, & Suhaimi, 2018) of employees whose goals are increasingly aligned with the organisation's business goals (Corbin-Herbison, 2019). The digital workplace creates new effective communication channels that foster collaboration and provide a better user experience with easy access to information (Corbin-Herbison, 2019). Increasing connectivity has a positive effect on innovation within an organisation (Haddud & McAllen, 2018; Attaran et al., 2019).

Lestarini et al. (2015) state that the digital workplace improves employee satisfaction and thus their engagement which further leads to improved product quality, agility and efficiency, as well as reducing errors in work (Brahma et al., 2021).

Another benefit of the digital workplace, which will become increasingly important in the years to come, is talent attraction and retention and employee retention levels (Haddud & McAllen, 2018). Corbin-Herbison (2019) reveal that employee satisfaction is improved by introducing social media to organisations, and the generations to come (millennials and Generation Z) expect a digital workplace.

All the above benefits achieved through the successful implementation of a digital workplace can be viewed from the perspective of an individual, but also from the perspective of an organisation. Based on a review of the literature and the work of Attaran et al. (2019), Lagus (2020) summarized in his research the benefits of the digital workplace for organisations and individuals, i.e. employees (Table 1).

Table 1: 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; Attaran et al., 2020; Hamburg, 2020; Shivakumar, 2020

2.2 Challenges of the digital workplace

Besides the benefits, the digital workplace also brings numerous challenges to a business. Organisations and individuals must be aware of these challenges, in order to minimize them and make the most of the benefits of the digital workplace.

The most common challenges of the digital workplace, as well as the implementation of ICT technologies in an organisation, are related to security issues (Attaran et al., 2019; Haddud & McAllen, 2018) and data protection: intellectual property, and trade secrets, both for organisation's research and development activities and ongoing projects. Another challenge that organisations have is in balancing local, global and international systems (linkages between systems), while managing the spread and reach of their products, their diverse markets, vendors and suppliers (Brahma et al., 2021). The lack of a clear distinction between tools and business needs can make information management systems inefficient (Attaran et al., 2019).

Flexibility and accessibility are generally seen as benefits of the digital workplace. However, their negative aspects should not be ignored, as they include stress (often called technostress) as well as the inability to establish a clear boundary between private and working life (Vallo Hult & Byström, 2021), resulting in a security and privacy issue again (Vallo Hult & Byström, 2021). Kalischko and Riedl (2021) reveal that the spread of technology in the workplace leads to technostress, which later can cause fatigue, burnout, depression and reduced employee satisfaction. Consequently, the duality of the impact of the digital workplace is obvious since the impacts can often be viewed from the aspect of both advantage and challenge. In addition to the autonomy they provide, digital workplace technologies make it easier to monitor employee performance (Gerten et al., 2019) and lead to loss of privacy (Brahma et al., 2021), which can result in reduced employee satisfaction, since according to Kalischko and Redl (2021), monitored employees are less satisfied with the job than those who are not monitored.

Individuals and organisations face yet another challenge and that is the necessary competencies (Vallo Hult & Byström, 2021), which often lead to insufficient internal resources in terms of competencies and training (Attaran et al., 2019). There is an increasing need for knowledge workers with specific digital competencies (Erceg & Zoranović, 2020), and organisations are having difficulties finding them, and once they have found them, how to motivate them to stay so their engagement is at an adequate level (Brahma et al., 2021). Furthermore, digital workplace requires different management, which poses new challenges to managers who often lack the appropriate competencies to design and manage a digital workplace (Haddud & McAllen, 2018; Vallo Hult & Byström, 2021)

New tools that are constantly being implemented within the digital workplace can also cause stress to employees. Fossilization of employees' habits often causes resistance to change (Corbin-Herbison, 2019), and therefore employees prefer familiar tools and they often solve new problems by using old tools (Moore, 2020). Furthermore, these tools cause a high dependence on technologies to perform everyday tasks and at the same time lead to increased costs due to the need for constant software updates (Corbin-Herbison, 2019).

The digital workplace improves communication and collaboration while reducing traditional communication methods which can lead to a loss of interpersonal communication skills. This is reflected in reduced opportunities for employees to physically communicate and integrate with their peers (Corbin-Herbison, 2019), which can often cause a feeling of isolation.

Having in mind the above mentioned challenges, it is possible to summarize them as follows (Deloitte, 2020; Hicks, 2019):

- Negative impact on productivity. Deloitte (Deloitte, 2020) reveals that distractions and poor supervision can hinder cooperation and negatively affect productivity. Employees who work remotely rely solely on digital communication, and are thus deprived of information shared through personal conversations or other non-organisational channels. All this can negatively affect productivity, create information silos and lead to duplication of work (Hicks, 2019).
- Relationship building and onboarding. Weak relationships between employees can become even weaker, while it is more challenging to build relationships with the newly-employed (Deloitte, 2020).
- Negative impact on development and learning. A virtual environment can negatively impact development and learning (Deloitte, 2020)
- Negative impact on innovation. The loss of serendipity that is often associated with closer employee interaction (Deloitte, 2020).
- Security issues. The digital workplace is increasingly exposed to hacking or accidental leaks of corporate data. Employees are often unfamiliar with security protocols for exchanging information through the corporate intranet (Hicks, 2019).

2.3 Balance in the digital workplace

Vallo Hult and Byström (2021) emphasize the need for a holistic approach to the digital workplace, finding a balance between protected and open information as well as the choice of tools. As already mentioned above, many characteristics of a digital workplace can be both advantages and challenges at the same time and this is often referred to as the digital workplace paradox (Bader & Kaiser, 2017; Blegind Jensen & Stein, 2021). For instance, autonomy and control are paradoxical because the existence of control prevents autonomy and vice versa (Bader & Kaiser, 2017).

Implementing the digital workplace will require a balance between the following opposites - paradoxes (Europese Commissie, 2017):

- Freedom and security. IT risks can be reduced by constraining users which also leads to reduced productivity.
- Simplicity and choice. Simplicity facilitates IT management, but at the same time reduces the number of functionalities offered to the user.

- Corporate devices and user devices. The boundaries between work and private life have faded, and users are increasingly using their own devices and applications for business purposes.
- Bundle and fragmentation. Big software vendors offer numerous, very well-integrated products that cover almost all aspects of the digital workplace. Besides the undoubted benefits that such bundles offer, there is also the threat of being dependent on only one software manufacture. Solutions offered by small software companies and the possibility of their integration into the digital workplace should certainly be taken into account.

Conclusion

The scientific community is obviously interested in the field of digital workplace. As already mentioned in the paper, authors often overemphasize the role of technologies within the digital workplace, often omitting other dimensions of the digital workplace. The available literature lacks clear consensus regarding the definition of a digital workplace. Since the digital transformation of the workplace is a continuous process that has been taking place in the last few decades, it is very difficult, if at all possible, to make a clear distinction between a "traditional" workplace and a digital workplace. Additional, primarily empirical research is needed in this area, which would first identify the key characteristics of the digital workplace and then its critical success factors.

Implementing the digital workplace has become an imperative for many companies, and it should not be solely guided by technology, while neglecting people, information and processes. Correlating technologies with these three categories, along with breaking down barriers between them, is at the core of the digital workplace. Adequate implementation of the digital workplace provides numerous benefits (but also challenges) and will be a strong factor in the future for attracting quality knowledge workers. The digital workplace should positively affect employee productivity and at the same time reduce distractions and waste of time.

Although the digital transformation of organisations and thus workplaces is largely underway, the research mentioned by Altari et al. (Attaran et al., 2019) emphasizes that most employees think that their workplace is not smart enough, that they often waste time due to inadequate technology, and that technology they have available at their home is often more advanced than the one available at their workplace. Organisations that have not yet performed the digital transformation of the workplace should keep in mind the challenges that such a transformation brings, as well as the dangers of relying solely on technology. It is necessary to establish a cross-functional implementation team tasked to create and implement a digital workplace strategy in accordance with business needs (Attaran et al., 2019). Employees should be involved in the digital transformation of the workplace, because in most cases they want both to support and participate in the transformation process, and to be active in designing a new environment (Meske & Junglas, 2020).

The COVID-19 pandemic has further accelerated the process of digital transformation of workplaces. Organisations are increasingly aware of the need to implement a digital workplace, which can greatly reduce the cost of replacing office spaces with home offices or offices close to employees' home (de Lucas Ancillo et al., 2020). De Lucas Ancillo et al. (2020) stress that the digital transformation of workplaces often reveals gaps within IT infrastructure, workforce planning and the development of the necessary digital skills. In the future, most organisations are likely to implement digital workplaces that will enable a hybrid form of work - working both in the office and from home (Samek Lodovici et al., 2021), which will completely erase the physical boundaries of workplaces because "the workplace is where the work is" (Evans-Greenwood, Stockdale & Patston, 2021). Advantages of the hybrid model, according to DeSoto (DeSoto, 2021), are reduced costs, increasing team member satisfaction, improving employee relationships, and improving productivity and efficiency.

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