Accepted Manuscript of: Zieba, M., Durst, S. & Gonsiorowska, M.,(2023). Knowledge Risks Arising from Digitalization. In A., Lerro, D., Carlucci, G., Schiuma (Eds.). Proceedings IFKAD: Managing Knowledge for Sustainability (pp. 38-47).

# Knowledge risks arising from digitalization

☐ *General theme*

☒ *Special Track: 02 Knowledge Management in Stormy Times – Or How to Develop and Implement Integrative and Inclusive Approaches and Activities?*

☐ *Doctoral Consortium*

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**Keywords –** Knowledge risks, risk management, knowledge management, digitalization

## Abstract

**Purpose -** This conceptual paper aims to identify and analyse knowledge risks resulting from digitalization. Additionally, the paper tries to present factors influencing knowledge risks arising from digitalization and ways of handling them.

**Design/methodology/approach** – The study is a continuation of the research by Durst and Zieba (2019) related to knowledge risks and their potential outcomes. This present study makes an update on the literature on knowledge risks arising from digitalization.

**Originality/value –** The paper offers new insights for researchers dealing with the topic of knowledge risks in the context of digitalization and ways of handling them.

**Practical implications** – The study provides insight for each of us, as the issue addressed concerns us all. By becoming aware of the potential consequences of such knowledge risks, people may meet and cope with digitalization in a better, more enlightened way.

**Limitations** – The presented paper is based on prior literature and the authors' reflections, experience, and analysis. Thus, to check for the suitability of the risks proposed, there is a need for empirical studies. Such studies are planned by the authors in the near future.

**Nature of proposed paper:** Academic Research Paper

## Introduction

The dynamic development of the past (the recent one in particular) has made the importance of knowledge for organisations and people in general even more evident. From the beginning of the study of knowledge management (KM), knowledge had been both presented and examined as something positive that has to be collected, stored, transformed and broadly shared within organisations (Nonaka and Takeuchi, 1995; Massingham, 2010; Durst and Edvardsson, 2012). Only recently, this approach has been questioned by the increasing focus on factors that can potentially bring negative risks and challenges related to knowledge. The whole plethora of so-called knowledge risks has been identified (Durst and Zieba, 2019) and organisations too have started to consider them in their regular activities related to knowledge management (Durst et al., 2019; Marabelli and Newell, 2012; Sarigianni et al., 2015). In the taxonomy proposed by Durst and Zieba (2019), there are three main categories of knowledge risks namely human knowledge risks, technological risks and operational risks. Among the technological risks, one can find risks related to cybercrime, old technologies, digitalization, or social media (Durst and Zieba, 2019). In this paper, the authors are going to examine in more detail one type of those risks, namely knowledge risks resulting from digitalization. As the world becomes increasingly interconnected - a development that started even before the pandemic but accelerated it - it is crucial for all types of organisations to also address the possible negative impacts of this development. To the best knowledge of the authors, however, there are no studies examining knowledge risks related to digitalization, thus there is a clear need for rigorous research on the topic.

To fill this knowledge gap, this conceptual paper identifies and analyses knowledge risks resulting from digitalization. The paper develops in the following way. In

the second part, it presents the concept of knowledge risks. In the third section, digitalization and risks related to it are described. In the fourth section, knowledge risks arising from digitalization are presented, alongside with factors influencing them and ways of handling them. The last section concludes the paper.

## The concept of knowledge risks

Perrott (2007) defined knowledge risk as the likelihood of any loss resulting from the identification,
storage or protection of knowledge that may decrease the operational or strategic benefit of a company. While Durst and Zieba (2017) in order to highlight the possible origin of knowledge risks divided them into internal and external knowledge risks. According to these authors, internal knowledge risks are primarily connected with an organization's internal environment and cover risks such as knowledge attrition, knowledge waste or knowledge hoarding, while external knowledge risks can emerge due to an organization's interactions with its external environment, examples of these risks are knowledge leakage or knowledge spillover. Durst and Zieba (2019) developed a powerful taxonomy of knowledge risks, realized in the form of a knowledge risk map, that classifies knowledge risks according to three categories: operational, human, and technological. Human knowledge risks are connected with the employees, organizational culture, social and psychological factors. Possible knowledge risks are knowledge hiding, unlearning, or missing competencies. Technological knowledge risks are related to the usage of different information and communication technologies (ICTs), and their consequences. It covers cybercrime, digitalization or social media risks. While the last category operational knowledge risks is about the organization's functioning and its daily operations. It includes knowledge acquisition and application risks, or risks related to the knowledge gaps.

Major knowledge risks if not addressed properly can result in several negative consequences, such as failing to offer high-quality solutions (Demian & Fruchter, 2009), costly disruptions of performance or operations (Martins & Meyer, 2012) or reduced capacity to innovate (Durst et al., 2018).

## Digitalization and risks related to it

Digitalization is more than just technical development or digital transformation. It is defined as "socio-technical phenomena and processes of adopting and using digital technologies in broader individual, organisational, and societal contexts." (Legner et al., 2017). It originated as the automation of routine work, the next wave of digitization gave rise to e-commerce, and the Internet became a global communication infrastructure. Today the vision of universal computerization is no longer distant, it is very close to being realised. The current wave of digitalization is affecting human lives at all levels (Legner et al., 2017). Certainly, it brings people many benefits every day, it improves the company's results, reduces costs, strives for new products, and provides ever-new customer experiences (Savic, 2019). Nevertheless, organisations and societies have not mastered the ability to follow and adapt to digital changes. Pearce (2020) reveals that even boards of directors are not well prepared and lack the competencies to govern digitalization incentives, especially as it brings ever newer challenges and risks. Additionally, the pandemic in 2020 had accelerated the digitization process and brought additional challenges. Not all companies were ready in terms of financial resources or simply time to properly adopt and use digital

technologies in the organisational context (Almeida et al., 2020). At that time, companies and societies felt tremendous pressure to digitise quickly, but the obstacle faced was the inexperience of many. The challenge was not just buying technology, digitization is about introducing new technology in such a way that it is adopted and becomes an integral part of the new reality that increases efficiency. Not all companies had the right conditions to successfully carry out this process (Almeida, 2021).

The adverse effects of accelerated digitization are being felt by everyone. Concerns have begun to arise that a less educated population unfamiliar with digital technology will begin to lose their jobs. Even those with skills may begin to fear that they will soon be replaced by intelligent machines. This harms society, arousing a kind of negative emotions, and an aversion to rapid digitalization. People are afraid of losing their autonomy, and thus their motivation to work may decrease (Gimpel & Schmied, 2020). Another side effect could be a deterioration in interaction and cooperation between people, whether friends, family, or co-workers. In a way, people are isolating themselves, hiding behind the screens of digital devices, while cyberbullying is gaining momentum. Another risk or side effect associated with digitalization is an increase in vulnerability to cybercrimes and thus their more frequent occurrence. National reports are sounding the alarm about this phenomenon. For example, Denmark, a leading country regarding the level of digitalization, is at the same time facing a very high risk of cybercrime and cyber espionage (Danish Centre for Cyber Security, 2021). Polish companies have also increased digitization initiatives in recent years. The driver for the change was the need to reorganise the workforce in the pandemic. As a consequence, more than half of Polish companies noticed an increase in vulnerability to cyber-attacks, and as many as 64% of them reported at least one cyber security incident in 2021 (Cyfrowa Polska, 2021). This example discloses that the pressure to keep up with technological changes is high, but to have pressure or even awareness of cybercrime is not enough for companies and societies to be adequately prepared. It seems that the pace of digitalization is faster than the pace of spreading the necessary knowledge and skills to cope with it. Moreover, this lack of competencies does not only affect individuals but also small and large companies. Even though the larger companies often have specialised IT departments, it was reported that 55% of large companies worldwide are unable to effectively stop cyber-attacks (Cyfrowa Polska, 2021). To sum up, although digitalization brings many positive phenomena, it also has some negative consequences and causes some risks for organizations and individuals. Deloitte has prepared a framework that covers 10 areas of digitization risk which are present in every digital environment (Deloitte, 2018). Additionally, Gimpel and Schmied (2020) identified and described 11 types and 35 subtypes of risks and side effects of digitalization. It can be said that the general risks associated with digitization are well described in the literature. However, there are many knowledge risks arising from digitization, while literature linking digitalization and knowledge risks is very scarce. Durst and Zieba (2019) have only generally mentioned digitalization as one of the knowledge risks in their previous studies. This constitutes a research gap, and there is a need to take a closer look at knowledge risks arising from digitalization.

## Knowledge risks arising from digitalization – factors influencing them and ways of handling them

In this section, the authors of this paper list potential knowledge risks resulting from digitalization followed by factors influencing these risks and potential countermeasures for dealing with them.

The first potential knowledge risk resulting from digitalization are related to **mental health issues**. Digitalization can adversely affect individuals' mental health and contribute to knowledge loss/unlearning. Employees might feel overwhelmed with digitalization and as a result, not cope with it in their everyday work. Employees not being in their best mental state might have problems with motivation to work, take sick leaves more often and manifest some negative phenomena related to knowledge, such as knowledge hiding or knowledge hoarding.

The second potential linked knowledge risks connected with digitalization is **the loss of autonomy** and **lack of empowerment**. Digitalization can lead to a loss of the ability to make one's own decisions, a feeling of lacking power among employees and as a result, a reduced engagement in activities related to knowledge sharing and creativity . Empowerment is a vital element of an organizational culture of trust and learning (Caniëls *et al.*, 2017) and when it is missing, employees are less eager to admit to mistakes or come up with innovative ideas.

The third potential knowledge risk related to digitalization is **the dehumanisation of work**. For example, digitalization brings job losses and the need for new occupations, which can lead to the dropout of some valuable employees and their knowledge from organizations. Possible consequences of this situation could be a motivation problem among workers across generations and their tacit knowledge is also likely to suffer.

The fourth knowledge risk is the **overreliance on technology** leading to wrong or improper decisions - based on automatization without the human factor inclusion trivial and biased decisions might be made.

The fifth knowledge risks is **vulnerability**. Companies of all sizes run the risk of having nothing to defend themselves against possible cyber-attacks. In the worst case, there is a threat of the cessation of business activities.

A last but not least knowledge risk is **acting rashly**. The fast and increasingly unpredictable development can lead to rash actions out of fear of missing something / losing the connection. Digitalization brings the pressure on organizations to adapt quickly and with the use of new technologies. Those technologies might not be suitable or stable enough to use in an organization, but organizations might feel pushed to implement them.

There are several factors that may potentially influence the knowledge risks described above. Those factors can be divided into two groups: human factors and technical factors.

Human factors:

1) ways of implementing digitalisation solutions and skills in change management manifested by the management staff (e.g., leadership support) - for example, if employees are trained, involved in the process of digitalisation process from the beginning, supported, etc., they may more easily accept it and the knowledge risks like mental health issues can be reduced;
2) part/share of the processes that are substituted with digitalisation - to which extent the regular routines and habits of employees will be affected by digitalisation and how well this is explained/justified to employees – if employees understand why it is necessary and how it will help in their work, they will feel more empowered;

3) creating organizational culture of trust – if employees trust their supervisors and peers, they will be more eager to accept digitalization process and its consequences;
4) faith in technology – if employees have faith in technology and are aware of both the positive and negative benefits it may bring, they will be more open to the whole digitalization process.
5) skills and competences of the organization members – if the organization members are constantly being trained or educated with regard to risk management, knowledge management and digital transformation, the likelihood that they will approach the topics in a more informed and reflective way increases.

Technical factors:

1) solutions and their suitability for the organisation/industry/sector – if the solution is suitable and adjusted to the needs of an organization, it can boost the operations and gain the acceptance of employees, otherwise, it is more probable to be a failure;
2) necessary upgrade of the solutions - how often, how it is going to be handled technically, etc. – the more complicated and frequent the updates need to be, the more difficult it will be to sustain the solution in the organization and get the support of employees;
3) digital readiness of the organization – if the organization is not ready technically and organizationally, implementing digitalization process will be hindered.

To sum up, there is a variety of knowledge risks arising from digitalization that may potentially hinder the operations of an organization. Their consequences might be negative for the organization and its individuals. Essential knowledge risks if not addressed can terminate the business. All in all, knowledge risks arising from digitalization should be taken into consideration and their consequences should be minimized as well as possible. Otherwise, they risk significantly reducing the performance/well-being not only of the organisation but also of the people.

Apart from these above knowledge risks resulting from digitalization, there are many risks in general. For example, there is a threat of even stronger discrimination against minorities. There is clear evidence that the programming of the algorithms is significantly influenced by the person behind it (Orwat, 2020). Since these jobs are still run by men, there can be considerable negative effects in different areas of life, e.g., in granting loans, in the job application process, etc. Digitalization can also lead to marginalised social groups. The changes risk exacerbating the digital divide, and people with low education and from poorer countries will suffer even more (Vasilescu et al., 2020). The above discussion also shows how important education, training and continuous professional development are. This must begin as early as possible, for employees to be trained and understand the whole digitalization process better. The state, but also each individual, has a decisive role to play here.

## Conclusions

This conceptual paper has identified and presented different types of knowledge risks arising from digitalization. Focusing on knowledge risks analysed in the context of digitalization, the taxonomy roposed by Durst and Zieba (2019) has shown again its powerful usefulness for different settings and challenges. From a practical point of view, the study provides useful insight for each of us as the issue addressed concerns us all. Becoming aware of the potential consequences of such knowledge risks, people may meet and cope with digitalization in a better, more enlightened way.

The limitations of this paper are similar to those of theoretical or conceptual papers. The presented paper is based on prior literature and the authors' reflections, experience, and analysis. Thus, to check for the suitability of the risks proposed, there is a need for empirical studies. Such studies can be conducted in the near future.

## Acknowledgements

The authors greatly acknowledge the financial support from the National Science Centre, Poland, within the grant no. No. 2019/33/B/HS4/02250, entitled "Knowledge risks in modern organizations".

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