MALATYINSZKI Szilárd & BARTHA Adrienn

How can adult learning support digitalization?

Introduction

Adult learning tools are very diverse and can support digitization in various methodologies. In many people, adult learning is associated exclusively with courses where adults sit in groups and expand their knowledge and skills. Over the last few decades, adult learning methodologies have evolved and changed significantly. Digital techniques and technologies, methodological innovations, and changes in the needs of the corporate sector have added a large number of practical elements to adult education (Barizsné Hadházi & Polónyi, 2003; Kriszt, 2017; Szelei & Malatyinszki, 2020; Kovács, 2023). Digital transformation has become inevitable at both the retail and corporate levels. In the field of corporate governance, with the introduction of digital process tracking and control systems, remote access, and online interfaces, managers - if they want to remain managers and not followers - must be at the forefront of technological developments (Bencsik, 2021; Dióssy et al., 2023; Gyimesi &Fejes, (2023). On the population side, it is helpful to examine which digital competencies are necessary for employees to be able and capable of performing their work efficiently and to carry out their daily administration and activities without wasting time, information, and money (Szűcs et al., 2023; Szőke-Milinte, 2023; Juhász et al., 2021).

I will start my research with a mainly secondary source analysis, investigating the interfaces between digitization, digitalization, robotization, adult learning, and business processes. In my primary research, I will synthesize the tools and opportunities for digitization from the corporate and then the retail sides, including the cooperation and synergies between the two areas.

Conceptual background and environment

Digitalization is an elusive concept for many. It understands that phones and computers are constantly changing, and they accept that they now have to manage a process through software, but it is not easy to explain why this is happening. Digital transformation is 'building on the capabilities of breakthrough, readily available technologies to develop unique and integrated organizational capabilities that make an organization receptive to continuous environmental change' (Ross et al., 2017). Digitalization means the digitization of content, processes, and objects that were previously physical or analog concepts. Digital transformation is at a higher level, as it is a commitment to transform how an organization works fundamentally. Transformation is not about a company investing in a new technology or developing and incorporating it. Digital transformation transforms value creation (Csedő et al., 2019).

If a company wants to digitize its processes, it can target several levels. The first level is to move away from paper documents and capture them digitally, with the advantage of searchability and more secure storage (digitization). The second level is the digital mapping and tracking of processes, which allows for process optimization, an example of which is the Order-to-Cash process. The third level can come after the first two levels have been achieved - this is the automation or robotization of processes. At this level, the human factor is replaced by algorithms to process structured data sets. Robotic Process Automation (RPA) can now perform more complex tasks with uncertain outcomes. In the next step, software robots can work in the usual user interface of IT applications, mimicking workers. It is possible, for example, that a software robot processes invoices after full automation (sorting, processing, accounting). The fifth level is the application of learning systems. These systems already use artificial intelligence and have the potential for continuous improvement and the ability to prepare decisions and make forecasts (Marcziniak et al., 2020).

Changing market needs and the spread of new generations of consumers and online channels also require new customer experiences. The change in the processes of organizations (digitization, digitalization, and digital switchover) naturally brings a change in organizational culture. Only some people are enthusiastic that a previously analog process (e.g., moving a paper-based satisfaction survey to an online space) is being done and provoking resistance from many employees, even if we look at municipalities, negatively affecting the customer experience (KPMG 2020). Identifying stakeholders and assessing needs is a critical element of digital strategy making, and it is also advisable to 'evolve' the organizational culture along with digital development. Resistance is often based on fear of the unknown and lack of knowledge. In 2019, it was predicted that by 2022, around 75 million jobs will be lost worldwide due to digitalization. Digitalization will not only eliminate jobs but also create jobs; it will create jobs and could create 130 million jobs in those three years. The simpler an occupation, the easier it is to define, and the more likely it is that it can be automated and robotized. According to Magyar Telekom's deputy CEO for human resources, "If you can say in one sentence what you do at work, in two or three years, your job will be taken over by a robot." (Wiederman, 2019) Looking at the flip side, many of us would not be sad to see the automatisms and manual parts of our jobs taken over by robots because it would give us time to create, be creative, and think constructively.

The importance and impact of corporate digitalization

The importance of enterprise digitalization means a fundamental transformation of the business environment through the widespread adoption and integration of digital technologies. This process has become a key factor for companies' competitiveness and sustainable development. Some important aspects to highlight about the importance of enterprise digitalization are:

- Increasing efficiency: The introduction and use of digital technologies enable companies to operate more efficiently, reduce administrative burdens, and optimize processes. For example, automation and robotization enable monotonous tasks to be automated, allowing employees to spend more time on strategic and creative activities.

- Fostering innovation: Digital technologies create opportunities to develop new products and services and innovate business models. Extensive data analysis and data mining can help companies understand their customer's needs and behavior in detail so they can create innovative solutions that better meet customer expectations.

- Increase competitiveness: Enterprise digitalization enables companies to respond faster to change and adapt more flexibly to changes in the business environment. Companies that adapt quickly and efficiently to digital technologies and new business models can gain a competitive advantage in markets.

- Improving the customer experience. Through online platforms, intelligent tools, and data analytics, companies can understand their customers' needs and behaviors in detail and offer them personalized offers and content.

- Sustainable development: Business digitalization is an opportunity for companies to adopt more sustainable and greener business practices. Through smart devices and IoT, companies can monitor and manage energy consumption and other resources more efficiently, reducing their ecological footprint and positively impacting the environment.

These are just a few examples of why digitalization in the enterprise is essential and beneficial. Companies must understand and recognize digitalization's opportunities and proactively take steps toward digital transformation. Enterprise digitalization is not only a temporary trend but a permanent change to which companies must respond continuously to remain competitive in global markets.

Developing the digital skills of businesses

Understanding and implementing the basic steps in the journey toward enterprise digitalization is important. The first step is for the company's management to recognize digitalization's importance and benefits and commit to digital transformation. Next, the company needs to develop a comprehensive digital strategy, including selecting and implementing digital technologies and tools and developing digital skills for employees. The next step is to implement digital technologies and tools. Enterprise digitalization involves using various digital technologies and tools to help companies operate more efficiently and effectively. These include data analytics and big data, artificial intelligence and machine learning, automation and robotization, smart devices and the Internet of Things (IoT), and cloud services and online platforms.

In the following, the authors will explain some of the elements of online learning platforms that companies can (also) use to develop the digital skills of their employees:
- Coursera: Coursera is an online learning platform that offers various courses on different subjects, including digital skills. Academics and industry professionals teach courses here, often including practical exercises and project-based learning opportunities.
- Udemy: Udemy is another popular online learning platform offering various digital skills development courses. Udemy courses are constantly updated and expanded and often include practical project-based assignments.
- LinkedIn Learning. The courses here often include interactive videos, practical exercises, and learning communities.
- edX: edX is a non-profit online learning platform created by leading universities and companies. Courses available on edX are high-quality and wide-ranging and often include opportunities to collaborate with tutors and peers.

In addition to online courses and training, virtual reality (VR) and augmented reality (AR) applications can be tools. VR and AR applications enable interactive and lifelike learning, such as through VR simulations of vehicle repair. It allows employees to practice in a realistic environment without real risks. Online interactive tools and platforms allow for live or asynchronous communication and collaboration, such as video conferencing, document sharing, and cloud-based collaboration tools. Online simulations and games allow employees to learn new skills and knowledge interactively. For example, a financial simulation game can help employees understand the basics of financial planning and analysis. Adaptive learning systems can adapt to the needs and pace of individual learners, for example, through personalized guidance and learning pathways. It allows for a more efficient learning process and better results.

Some examples of adaptive learning platforms:

Duolingo: Duolingo is a language learning application that adaptively adjusts learning content and exercises to each user's level and achievements. The system takes into account users' strengths and weaknesses and provides them with personalized advice to improve.

Smart Sparrow. The app analyses student responses and behaviors and then dynamically adjusts content and assignments to suit learners' needs and levels.

ALEKS (Assessment and Learning in Knowledge Spaces). The application analyses students' knowledge and skills and then offers them personalized learning pathways based on their strengths and weaknesses.

Cerego: Cerego uses interactive flashcards and repetition algorithms to facilitate optimal learning. The app considers student responses and memory performance and then dynamically adjusts learning content and exercises to suit each student's needs and skills.

The importance of employee digitalization

The digital skills and needs of the population, both as users and employees, significantly impact the development of digitalization. The ability to be receptive, the need for acceptance, and the ability to learn to determine the level and extent to which digitalization can spread. It affects the development and quality of jobs. Think of how cashiers' jobs have been transformed by people's acceptance of automated tills in retail or how the introduction of debit cards, phone payment systems, and apps has transformed banking. In the Hungarian National Bank, 661 employees were made redundant in 2023 following the successful introduction of an investment app (Papp, 2023).

Digitalization is constantly becoming part of people's lives. Some cases of atypical employment can help to adapt work activities to workers' lifestyles and living conditions. Part-time work is suitable for working alongside people with disabilities and young children and is also a good way of gradually returning to work. The possibility of teleworking reduces the time and cost of transport and creates cost-effective employment for the employer. Self-employment also offers opportunities to pursue work activities that fit with private life. The above flexible working arrangements can be implemented within an appropriate legal framework and with the employer's support. Non-working activities can occur in the employee's home, off-site, or even in a community office (coworking). Off-site locations can provide privacy and privacy from co-workers. The most common jobs in teleworking are software development and testing, IT networking, data-related jobs, engineering, creative professions (animation, graphics, photography), writing, translation, data entry, management and assistant jobs, customer service, sales, marketing, accounting, bookkeeping and HR (CodeBerry, 2020). However, working from home cannot be done without the conscious use of time and resources. Rarely is a separate soundproof room with the right digital equipment for each family member. Our previous research on teachers' lives forced to work online also showed that the following shortcomings were experienced in the home office: technical equipment (50.2%), methodological preparedness (54.7%), and time management (49.5%). In this specific case, employees acquired the majority of the tools. For many workers working from home, it is not easy to reconcile with family life. Of the nearly 300 respondents to this survey, 37.3% said it is difficult to teach from home, 46.8% can teach well but have challenges, and only 15.9% were satisfied (Malatyinszki, 2020). Working from home also requires a high level of awareness. Given the proper awareness, scheduling, location, and technical conditions, working from home can make work more homelike and be a cost-cutting option for employers. It should not be neglected, however, that excessive home working is detrimental to family life and work if the personality and habitus are not right. In addition to harmful amounts of computer games and internet use, it can reduce family cohesion and quality time together and make life one-sided. Let us not forget that work, as well as being a means of value creation, self-fulfillment, and income generation, is also a means of living family life in a quality way.

Digitalization is a significant factor in the lives of the general population in terms of their finances. Considerable research has been conducted on financial awareness (Yamauchi & Templer, 1982; Zsótér et al., 2015; Németh et al., 2016; Kálmán et al., 2021; Tóth, 2022) and confirmed that the educational environment of children, parental role models, parents' saving, buying, and spending habits have a significant impact on the awareness of the growing generation. The tools, adult education methods, training, and awareness-raising programs all help to reduce future borrowing mistakes and support a solid financial foundation. Adult education and intergenerational cooperation are of paramount importance in the process of rapid digitalization. Each age group has specific financial processes that tools can help with. These include online cheque payments, transfers, borrowing, investing, card transactions, shopping, and registering for events. For the generations living together (intergenerational), it is helpful to identify the financial operations that determine their lives and where they get stuck. At the same time, plan when and how the other party can help. It may be that a grandmother can help a grandchild with less knowledge of borrowing or the real estate market process to report and pay meters for public service. By collaborating and planning together, family communities can work more quickly and efficiently online and reduce vulnerability. It is also possible to teach specific processes related to a particular tool or software to our parents or grandparents, who

will then engage themselves - considering themselves useful - in the joyful digitalization processes. With centralized education and no external constraints, working together can help to reduce costs and learn to make cashless, fast financial transactions.

Workers and employers work together to encourage digitalization

Digitalization can only be achieved with the evolution and transformation of organizational culture. Conscious employer decisions can significantly shape and change this organizational culture (Orosz, 2012). To support digitalization, employees need skills, abilities, and skills that they can rely on and that can be used to acquire new tools and implement new production and service processes. Today, employers can only do with the introduction of home working, especially in intellectual jobs. Not only is there the threat of a virus crisis, but employees expect to be at work only when they need to be, even during working hours, to deal with professional, methodological, and other matters. Thus, maintaining work-life balance requires managers to develop and learn motivational, delegation, and control leadership competencies that support the individual's need for self-fulfillment while simultaneously achieving corporate goals. The transformation of work can only be achieved by developing the digital environment of companies. The development of CRM and ERP systems and secure access to data on corporate servers or cloud storage has become essential.

The supplier and logistics systems that can make production efficient are now based on company-to-company data flows, where manual activity is not necessary (in a good way). The same applies to accounting systems, bookkeeping, invoicing, and cooperation with government offices. Isolated operational systems and printing and sending data to any authority are a thing of the past. The question is how far a person who did not have a prominent role in IT during their training can develop in this area. Can they absorb the knowledge that IPAR 4.0 has produced or that Generation Z has absorbed from the classroom or networking? The leadership role is still unquestioned. Can you put together teams that learn from each other? Can you engage adult learning companies that deliver hardware, software, training, and organizational development together? Does management even recognize the need for this? These questions are fundamental to market-based operations in the 21st century.

Summary

The cooperation between man and machine is about more than just serving machines. The entrepreneurial sector, the learning of managers and employees, must undergo a qualitative evolution where AI can bring real qualitative improvement. It can solve problems that can save hundreds or thousands of person-hours per month and make production processes and value chains more efficient. It is critical to recognize what task we give it and whether we allow it to make processes more valuable or faster. Are we brave enough to ask our colleagues questions about your processes and give suggestions on what work to replace? What activities do you not like to do? Tell us which jobs you would like to do! Working in an atmosphere of honest trust helps to bring problems to the surface, and the promotion of knowledge (whether organizational or outsourced) is a new quality brought about by the achievements of digitalization. It is no coincidence that the Kaizen principle in Japanese organizational culture constantly questions the efficiency of processes and the perfection of methods.

It requires an entirely different management perspective. Questioning the superiority of people and even managers and the need for a continuous relationship and cooperation between machines, software, and workers. As technology in different sectors in different countries becomes more and more efficient monthly, monitoring, adapting, and incorporating good practices, changes, and innovations have become inevitable. Suppose the digital environment and its achievements are not reflected in the production or service sectors. In that case, businesses in the Far East with a different working culture and attitude - which have so far only made copies - will overtake their European competitors. They will show up in product and service development, raw material use, inefficient

production, and logistics, They will come to us, and we will copy their processes, which AI may already develop. Suppose we want to be at the forefront of change. In that case, we need to support market-driven change every minute, foster an innovation environment, develop individual, production, and service levels in our businesses, and provide an organizational environment where change and development are financial, moral, and individual career opportunities. If this utopia becomes a reality, we will at least have the tools to enable humans, machines, and AI to 'work' together towards a happier future of sustainable development.

Bibliography

- Balázsné Hadházi, E. & Polónyi, I. (2003). A hazai felnőttképzés jellemzői. *Competition 2(1):* 36-55. 10.21845/comp/2003/1/4
- Bencsik, A. (2021). Vezetői felkészültség felmérése a digitális kor kihívásaira. Nemzetközi összehasonlítás. *Vezetéstudomány/Budapest Management Review 52(4)*: 93-108, 10.14267/VEZTUD.2021.04.08
- CodeBerry (2020). A 15 leggyakoribb otthonról végezhető munka 2020-ban, https://codeberryschool.com/blog/hu/15-otthonrol-vegezheto-munka/ (Last download: 14/01/2022).
- Csedő, Z. & Zavarkó, M. & Sára, Z. (2019): Innováció-e a digitalizáció? A digitalis transzformáció és az innovációmenedzsment tanulságai egy pénzügyi szolgáltatónál, *Vezetéstudomány, I. évf. 7-8.*, DOI:10.14267/veztud. https://unipub.lib.uni-corvinus.hu/4141/ 2019.07.08
- Dióssy, K. & Losonci, D. & Demeter, K. (2023). Vezetési stílusok hatása a digitális transzformációra. *Vezetéstudomány/Budapest Management Review, 54(10):*2-14, 10.14267/VEZTUD.2023.10.01
- Gyimesi Á. & Fejes B. (2023). A digitális transzformáció vállalati adaptációját irányító tényezők hatásmechanizmusának koncepciója a hazai KKV-k percepciói alapján. *Marketing & Menedzsment 57(3):*36-46, 10.15170/MM.2023.57.03.04
- Juhász, T.; Horváth, A. ; Kálmán, B.; Tóth, A. (2021). Digital Competence in the Visegrád Countries. In: Langhamrová, Jitka (eds.) *Reproduction of Human Capital – Mutual Links and Connections* (RELIK 2021): Conference Proceedings of the 14th International Scientific Conference RELIK, Praha, Prága, Czech Republic: Vysoká škola ekonomická v Praze (2021) 934 p. pp. 308-320.
- Kálmán, Botond; Bárczi, Judit; Zéman, Zoltán. The Impact of the First Wave of Covid-19 on the Financial Security of Economics Students in Higher Education, *Pénzügyi Szemle/Public Finance Quarterly (1963-) 2021*: 3pp. 1-22., 22p. (2021)
- Kovács, M. (2023). A felnőttképzés stratégiai megújításáról. *Világpolitika és Közgazdaságtan 2(2):* 86-88, 10.14267/VILPOL2023.02.14
- *KPMG: Digitalizáció* – https://home.kpmg/hu/hu/home/industries/fogyasztoi-piacok/digital-transformation.html, (Last download: 04/01/2022)
- Kriszt, S. E. (2017). A felnőttképzés szerepe és megvalósulása hazánkban, különösen a gazdaságtudományi képzési területen. *Felsőoktatás, Életen át tartó tanulás és az ENSZ Fenntartható Fejlesztési Célok megvalósítása - Higher Education, Lifelong Learning and Implementation of UN Sustainable Development Goals,* BudapestVolume
- Malatyinszki, Sz. (2020): *Experiencing Digital Education*, EasyChair Preprint, https://easychair.org/publications/preprint_download/GtvW, (Last download: 14/ 01/2022)
- Marcziniak R. & Móricz P. & Baksa M. (2020): Lépések a kognitív automatizáció felé – digitalis átalakulás egy magyarországi üzleti szolgáltatóközpontban, *Vezetéstudomány, LI. 6.*, https://doi.org/10.14267/VEZTUD.2020.06.05
- Németh, E. & Béres D. & Huzdik, K. & Zsótér, B. (2016): Financial personality types in Hungary – research methods and results. *Financial and Economic Review, Vol. 15, No. 2,* 153–172. http://real.mtak.hu/37887/1/erzsebet_nemeth_daniel_beres_katalin_huzdik_boglarka_zsoter_en_u.pdf (Last download: 2/07/2021)

- Orosz, L. (2012). *A szervezeti kultúra fejlesztése és alakítása,* Közigazgatási Vezetői Akadémia, https://tudasportal.uni-nke.hu/xmlui/bitstream/handle/20.500.12944/100195/49.pdf?sequence=1&isAllowed=y, (Last download: 20/04/2024)
- Papp, Zs. (2023). Saját ígéretét cáfolja az Orbán-kormány, több mint 2600 fős létszámleépítést rendelt el a közigazgatásban, Refuting its own promise, the Orbán government has ordered more than 2,600 redundancies in the public administration, *Népszava,* 2023. 06. 09. https://nepszava.hu/3197734_kozigazgatas-tomeges-elbocsatas-allashelyek (Last download: 09/06/2023)
- Sebastian, I. M. & Ross, J. W. & Beath, C. & Mocker, M. & Moloney, K. G. & Fonstad, N. O. (2017). How Big Old Companies Navigate Digital Transformation. *MIS Quarterly Executive, 16(3),* 197–214
- Szelei, A. & Malatyinszki, Sz. (2020). A felnőttképzés értékei napjainkban. In: Malatyinszki, Sz. (2021). *Térségfejlesztés és emberi erőforrás – A neveléstudomány társadalmi metszetei.* Gondolat. 76-88.
- Szőke-Milinte, E. (2023). A digitális énhatékonyság. *Mester és Tanítvány 1(1)*:53-71, 10.61178/MT. (Last download: 13/01/2023)
- Szűcs, Z. & Lengyelné Molnár, T. & Racsko, R. (2023). A társadalmi szakadék csökkentését szolgáló digitális kompetencia stratégiai körképe, *Civil Szemle, 6:*67-77
- Tóth, A. & Juhász, T. & Kálmán, B. (2022). Determining factors of Motivational Dimensions (Childhood et al. Competition Attitudes) *ACTA POLYTECHNICA HUNGARICA 19: 4,*. 229-250.
- Wiedemann, T. (2019). A digitalizáció miatt teljesen átalakul a munkaerőpiac, de már most sem mindegy, hogy mit írsz az önéletrajzodba, Digitalisation is transforming the job market, but it already matters what you put on your CV, G7, https://g7.hu/fizetett-hirdetes/20190322/a-digitalizacio-miatt-teljesen-atalakul-a-munkaeropiac-de-mar-most-sem-mindegy-hogy-mit-irsz-az-oneletrajzodba, (Last download: 04/01/2022)
- Yamauchi, K. T. & Templer, D. J. (1982): The Development of a Money Attitude Scale. *Journal of Personality Assessment, Vol. 46, No. 5,* 522–528. https://doi.org/10.1207/s15327752jpa4605_14
- Zsőtér, B. & Béres, D. & Németh, E. (2015): Magyar fiatalok jellemzése pénzügyi attitűdjeik és magatartásuk mentén. *Vezetéstudomány, Vol. 46, No. 6,*. 70–80. http://unipub.lib.uni-corvinus.hu/1981/1/vt2015.