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INVESTIGATION OF THE LEVEL OF WORKPLACE DIGITALIZATION IN THE TERMS OF REMOTE ECONOMIC GROWTH

ДОСЛІДЖЕННЯ РІВНЯ ДІДЖИТАЛІЗАЦІЇ РОБОЧОГО МІСЦЯ В УМОВАХ ЗРОСТАННЯ ДИСТАНЦІЙНОЇ ЕКОНОМІКИ

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An analysis of the literature has shown that the focus of the researchers is mainly on the technical aspects of assessing the level of workplace digitalization. We have decided to combine the views of different scholars into one methodology that includes both technical factors and factors of moral preparedness in Green, Blue & Digital Economy Journal. The purpose of this article evaluating the multiplatformity and the availability of constant access to the Internet, without which it is impossible to work remotely and work in the digital workplace. Practical implications is a digital environment that enhances the performance of staff and the mobility of work areas. This will ensure a stable workflow that is supported by consistent access to the Wi-Fi network. If the study reveals a low level of this indicator, such things should be done: improve the equipment, install high quality software and ensure multiplatformity.

Keywords: digital workplace, workplace digitalization, digitalization, digital economy, remote economy.

Стаття присвячена актуальному питанню підвищення рівня діджиталізації в усьому світі призводить до ситуації, в якій міжнародні компанії змушені адаптуватися до тенденції віддаленої економіки та змінити робоче середовище своїх співробітників. Таким чином, представлена стаття відображає дослідження сучасних тенденцій у соціально-економічній сфері, результати яких можуть мати вплив на людські стосунки в компаніях та задоволення потреб працівників при дотриманні високого рівня ефективності їх праці. Аналіз літератури показав, що увага дослідників зосереджена переважно на технічних аспектах оцінки рівня діджиталізація робочого місця. Крім того, усі вони підкреслюють фактори, які мають більший вплив на цифрове робоче місце. Ми вирішили об'єднати погляди різних науковців в одну методологію, яка включає як технічні фактори, так і фактори моральної готовності в статті THE METHODOLOGY OF EVALUATION OF THE WORKPLACE DIGITALIZATION LEVEL, Green, Blue & Digital Economy Journal, Volume 2 Number 3. Riga, Latvia: "Baltija Publishing", 2021. Метою цієї статті є оцінка мультиплатформенності та наявності постійного доступу до Інтернету, без якого неможлива віддалена робота та робота на цифровому робочому місці. Практичні наслідки – це діджитал середовище, яке підвищує продуктивність персоналу та мобільність робочих зон. Це забезпечить стабільний робочий процес, який підтримується послідовним доступом до мережі Wi-Fi. Якщо дослідження виявить низький рівень цього показника, потрібно робити такі речі: покращувати обладнання, встановлювати якісне програмне забезпечення та забезпечити мультиплатформенність. Однією з головних цілей представленого дослідження є визначення інструментів, які можуть підвищити рівень діджиталізаія робочого місця та водночас підвищити ефективність роботи персоналу. Ці інструменти мають охоплювати

всі аспекти ведення бізнесу, включаючи залучення клієнтів і співробітників, бухгалтерський облік і фінансові операції, управління проектами та продуктивність. Також важливо визначити різницю між термінами «remote job» та «flexible job».

Ключові слова: цифрове робоче місце, діджиталізація робочого місця, діджиталізації, діджитал економіка, віддалена економіка.

Problem statement. The modern world, which has already become digital, requires new tools, new skills and meet new challenges for establishing cooperation with its workers. This research aimed at improving the methodology for assessing the level of workplace digitalization and to evaluate the level of workplace digitalization on the example of a company "IT marketing", taking into account technical and moral factors. Recent years statistics confirms the growth of people working from home and building careers remotely. The problem is that it is difficult for scientists and practitioners to assess the level of digitalization of the workplace and the factors that affect the digitalization of the workplace, so they do not know what to improve in the organization of removed work. That is why the development of such methodologies enables scientists to evaluate indicators and the level of their impact, and enables practitioners to improve communications, support, soft and other of their employees and, depending on their resources, to focus on some main and then secondary things. The research we used our methodology and evaluated the level of digitalization on the example of company "IT-Marketing". Practical implications. In the article gave the recommendations to the company's management how to increase the level of workplace digitalization.

Analysis of recent research and publications. The analysis of the literature showed that the focus of the researchers is mainly more attention is paid to technical aspects of assessing the level of workplace digitalization and safety indicators, neglecting employees' morale and their willingness to work remotely. Further research will be based on developed our assessment methodology, which takes into account existing strategies of workplace digitalization. In order to calculate the level of digitalization, we have conducted a sociological survey based on a real enterprise in the IT industry, where all employees work remotely or have experience of working with remote workers. We have decided to combine the views of different scholars into one methodology that includes both technical factors and factors of moral preparedness in Green, Blue & Digital Economy Journa [2].

Emphasizing the unresolved parts of the general problem. In the general problem, such a methodology does not exist and never existed. There were other methodologies, but they did not investigate this. According to a study proposes a methodology for assessing the level of digitalization of the workplace in the conditions of development of a remote economy.

Purpose statement (setting objectives). The reason for writing this article is practical help to organizations, companies and businesses, as well as the opportunity to highlight indicators that affect the level. It should be emphasized that the topic of this article, especially in the conditions of the remote economy development, is relevant and corresponds to the realities of today.

The main research material. We have conducted a sociological survey of the employees of the Ukrainian company "IT- marketing". Each employee has his or her own digital workplace and experience of remote work in various positions: as a contractor or as a manager managing remote work.

The company "IT-marketing" works in the field of information technologies. The company generates traffic from Google and social networks to the websites of various e-commerce companies. The main client base of this company is concentrated in Eastern Europe, but the office is in Kiev. Up to 10 people work in the office, the rest work remotely in digital workplaces. These digital jobs are equipped with powerful computers. A private network is set up between the computers and it is also connected to the headquarters in Kiev. This is necessary for the rapid exchange of tasks and results of work between remote workers.

Each employee from his or her work computer always has the opportunity to review his or her to-do list for the near future (from 1 day to 1 month), which can be changed by the local management of the Kiev office. Every week, the company executives hold an online conference with the team leaders.

Important news of the past week is discussed, and next week's tasks are set. If necessary, such meetings may be held more often than once a week. Thereafter, an additional meeting is held directly at the Kiev office, at which the manager distributes the tasks for a week among the

employees. Typically, each employee estimates how much time he or she will need for each task and everyone gets to work. The next week's meeting will evaluate the relationship between the time that was estimated in advance and the actual time of task completion. The ratio of 1–1.5 is acceptable, i.e., the actual execution time should not exceed the forecast time by more than one and a half times. If the coefficient is higher, then the employee should try to estimate his or her time more accurately. In addition, the team atmosphere is important because each employee feels like they are part of the great mechanism and feels their own responsibility for the end product and for each of their colleagues. 102 people took part in the survey, of whom 54.9% were men and the rest were women. In terms of work experience, the interviewed people have the following structure: 44% work for less than 5 years; 12% have 5–10 years of experience; 14% have 10–15 years of experience; 30% work for more than 15 years. The respondents are mostly over 30 years old (49%), in the second place – people aged 20–25 (30.4%), in the third place – people aged 25–30 (13.7%), the rest (6.9%) are under the age of 20. The respondents answered 25 questions, each related to an assessment of their digital workplace and to a specific stage in the methodology. The questions and their connection to the stages are presented in Table 1. The maximum number of points that one can get by each factor is 4 points. Accordingly,

Table 1

Methodology of the level of workplace digitalization with questions for evaluating the level of digitalization

Methodology of the level of workplace digitalization	
Stage 1. Evaluation of automatized business-processes	
Information systems usage	Grade the level of information cloud systems usage Grade the level of digital team planning Grade the level of online project management usage
Online tools usage	Grade the level of search engine usage Grade the ability to use data analysis Grade the level of digital files or podcasting usage
Online teamwork	Grade the ability of online discussion used in work process Grade the level of support from your colleagues that you can get in professional chats in social media
Stage 2. Moral readiness for remote work	
Self-discipline and self-control	Grade the level of self-discipline
Initiative and making decisions	Grade the level of taking the initiative in your work Grade the level of how often you make your own decisions Grade your creativity
Professional development	Grade the level of new tools learning Grade the level of how innovative you are
Ability to do stable and predictable work	Grade the level of obedience to your employer Grade the level of how often you plan your work
Stage 3. Security and reliability of digital workplace	
Mobile internet usage	Grade the level of mobile internet usage
Security	Grade the ability to detect viruses in electronic information Grade the ability to install digital security systems by yourself Grade the level of files downloaded from internet
Quantity of gadgets used for work	Write the numbers of digital gadgets that you use during your work
Stage 4. Multi-platformity and consistent access	
Internet-access	Grade the level of consistent access to remote facilities Grade the stability of Wi-Fi internet access
Flexibility	Grade the ability to use websites on different platforms Number the quantity of browsers that are used for remote work

Compiled by the author

the result from 1 to 2 points indicates a low level of factors, 2–3 is a satisfactory level, 3–4 – a high level. Every enterprise should strive for the maximum level, which shows a high level of job digitalization and high efficiency of employees.

The calculation was made according to the following formula:

$$K_n = \frac{(L_4 \times 4) + (L_3 \times 3) + (L_2 \times 2) + L_1}{100},$$

where K_n is the coefficient of the calculation factor, L_4 is the number of people with the highest score in percentage terms and L_1 is the number of people with the lowest score in percentage terms. Thus, the assessment of the level of information cloud and system usage was carried out as follows:

$$K_n = \frac{(6,9*4) + (22,5*3) + (48*2) + 22,5}{100} = 2,136$$

The calculations for Table 2 indicate a satisfactory level of job digitalization in terms of evaluation of work with automated business processes. The automation of project teamwork and the level of usage of digital files and podcasts are of particular importance too. Podcasts are not really used to organise the work of the enterprise. While other companies are actively using information in audio format, the company 'IT-marketing' has not yet implemented this in its management toolkit. These two indicators are interrelated and the lack of attention to them may affect other indicators of this group.

At the same time, the indicators of the factor Online teamwork show a relatively high level, so it can be concluded that these indicators tend to be high.

According to the calculations in Table 3, the indicators of the factor "the ability to do stable and predictable work" show the average level of job digitalization in terms of moral readiness for remote work.

Self-discipline, self-control, and professional development indicators show a high level. In addition, the level of creativity is high, but consideration should be given to such questions as 'grade the level of taking the initiative in your work and grade the level of how often you make your own decisions', as their coefficients are below average. The employees are neutral about taking the initiative in their work and making their own decisions. The correlation of these indicators leads to the following results. Such questions

Table 2

Stage 1: Evaluation of automatized business-processes

Factors	Questions	Very high level	High level	Low level	Very low level	Kn
Information systems usage	Grade the level of information cloud systems usage	6,9	22,5	48	22,5	2,136
	Grade the level of digital team planning	7,8	36,3	37,3	18,6	2,333
	Grade the level of online project management usage	6,9	19,6	40,2	33,3	2,001
Online tools usage	Grade the level of search engine usage	10,8	47,1	37,3	4,9	2,64
	Grade the ability to use data analysis	6,9	35,3	48	9,8	2,393
	Grade the level of digital files or podcasting usage	2	14,7	50	33,3	1,854
Online teamwork	Grade the ability of online discussion used in work process	6,9	41,2	38,2	13,7	2,413
Factors	**Questions**	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Kn**
Online teamwork	Grade the level of support from you colleagues that you can get in professional chats in social media	10,8	58,8	20,6	9,8	2,706

Compiled by the author

as “grade the level of self-discipline, grade the level of new tools learning and grade the level of how innovative you are” are interconnected, so they already show a high level, thus it can be argued that the factors of self-discipline, self-control and professional development tend to be high. Analysing stage 1 and stage 2, we notice a link between the indicators of the factors of information systems usage and online tools usage, which have a great influence on the factor of the ability to do stable and predictable work.

Table 4 calculations show a satisfactory level of job digitalization in terms of security and reliability of the digital workplace. Particular attention needs to be given to the use of the mobile Internet, the ability to detect viruses in

Table 3

Stage 2. Moral readiness for remote work

Factors	Questions	Very high level	High level	Low level	Very low level	Kn
Self-discipline and self-control	Grade the level of self discipline	15,7	71,6	6,9	5,9	2,973
Initiative and making decisions’	Grade the level of taking initiative in your work	15,7	18,6	54,9	10,8	2,392
	Grade the level how often do you make your own decisions	17,6	16,7	53,9	11,8	2,401
	Grade your creativity	41,4	48	8,8	2	3,292
Professional development	Grade the level of new tools learning	25,5	67,6	4,9	2	3,166
	Grade the level how innovative you are	43,2	43,1	9,8	3,9	3,256
Ability to stable and predictable work	Grade the level of obedience to your employer	8,8	58,8	4,9	27,5	2,489
	Grade the level how often you plan your work	6,9	52,9	18,6	21,5	2,45

Compiled by the author

Table 4

Stage 3. Security and reliability of digital workplace

Factors	Questions	Very high level	High level	Low level	Very low level	Kn
Mobile internet usage	Grade the level of mobile internet usage	6,9	35,3	38,2	19,6	2,295
Security	Grade the ability to detect viruses in electronic information	3,9	29,4	52	14,7	2,225
	Grade the ability to install digital security systems by your see	3,9	27,5	48	20,6	2,147
Factors	**Questions**	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Kn**
Security	Grade the level of files downloaded from internet	29,4	45,1	16,7	8,8	2,951
Factors	**Questions**	**4**	**2**	**3**	**1**	**Kn**
Quantity of gadgets used for work	Write the numbers of digital gadgets that you use during your work	17,6	49	25,5	7,8	2,762

Compiled by the author

electronic information and the ability to install digital security systems. Now, their indicators are below average, so they cannot ensure quality remote work. It has to do with stage 1 and the indicators of Information systems and Online tools usage.

Furthermore, the installation of digital security systems is not used to organise the operation of the enterprise. Ignoring these systems is a major disadvantage as they affect other indicators.

However, the estimates of the level of files downloaded from the Internet and the number of digital gadgets used at work show a high enough level, so we can conclude that these figures provide stable, high-performance remote work.

Table 5 calculations show a satisfactory level of job digitalization in terms of multi-platformity and consistent access. The ability to detect viruses in electronic information and the ability to install digital security systems are connected with the coefficients of consistent access to remote sites and the ability to use websites across different platforms, so special attention should be paid to improving the quality of remote work. Not using websites across different platforms leads to poor performance. Not paying proper attention to these interrelated indicators affects high quality work. As to the indicators of the number of browsers that are used for remote work and the stability of Wi-Fi internet access, they show a high level, therefore, it can be concluded that this indicator has high potential.

The results of the study show that the indicators of factors at this stage are very heterogeneous. For example, the Wi-Fi stability indicators suggest a high level of stability. However, consistent access to remote facilities is average, with an estimated figure of just 2,147. This may indicate that, despite having good access to the Internet, employees do not take full advantage of these capabilities.

The fact that the company staff's ability to use websites across platforms was assessed as being low, confirms our assumptions. This proves our point and indirectly points to the workers' burnout and possibly the start of the burnout stage.

The high level of usage of different browsers at work is a positive thing and correlates with the number of digital gadgets used by employees (Stage 3). These indicators have almost identical figures – 2,743 and 2,762.

It is also necessary to estimate the overall level of the workplace digitalization at the enterprise 'IT-marketing' and the level by stages Table 6.

From the calculation, it is clear that out of 100 possible points of assessing the level of workplace digitalization, the company "IT-marketing" is gaining 63.38 points. This indicator is higher than the average level, but at the same time, it suggests how many problematic areas exist in the current organisation of work at the enterprise. The calculation by the methodology gives an

Table 5

Stage 4. Multi-platformity and consistent access

Factors	Questions	Very high level	High level	Low level	Very low level	Kn
Internet-access	Grade the level of consistent access to remote facilities	2,9	32,4	41,2	23,5	2,147
Flexibility	Grade the ability to use websites on different platforms	5,9	16,7	35,3	42,2	1,865
Factors	**Questions**	**High level of stability**	**Have some problems**	**Often have problems**	**Mostly have problems**	**Kn**
Internet-access	Grade the stability of Wi-Fi internet access	62,7	18,6	9,8	8,8	3,35
Factors	**Questions**	**1**	**2**	**3**	**4**	**Kn**
Flexibility	Number the quantity of browsers that are used for remote work	19,6	43,1	29,4	7,8	2,743

Compiled by the author

Table 6

Summary table assessing the level of digitalization of the workplace

Stage of methodology	Grades after evaluation	Maximum grades
Stage 1. Evaluation of automatized business-processes	18.476	32
Stage 2. Moral readiness for remote work	22.419	32
Stage 3. Security and reliability of digital workplace	12.38	20
Stage 4. Multi-platform and consistent access	10.105	16
Overall:	63.38	100

Compiled by the author

accurate understanding of the weaknesses. For example, the issues within the first stage need the most attention and change. Moral readiness to work requires the least intervention; it must be maintained at the current level.

Thus, it can be argued that the successful improvement and management of distance work needs many versatile mechanisms, from technical support to quality organisation of the work process and control over the morale of employees. The atmosphere in the team is important, and each employee must feel that they are part of the great mechanism and feel their own responsibility for the final product and for each of their co-workers.

As can be seen from the study, adding a stage of moral readiness is a crucial aspect for assessing the level of job digitalization. We have noticed that some of the indicators of the stages 1, 3, and 4 correlate with the second stage indicators. This allows us to assume that there are more complicated links between the indicators, which were singled out in this study.

Conclusions. The results of the study showed that there is a relationship between the stages of the methodology. In addition, we traced the relationship between stage 1 and stage 2, namely, information systems usage and online tools usage, which influences the factor of the ability to do stable and predictable work. Then, we see the impact of these indicators on mobile Internet usage, the ability to detect viruses in electronic information and the ability to install digital security systems. In stage 4, there is a mutual influence on the indicators of consistent access to remote objects and the opportunity to use websites on different platforms. Analysing these relationships, we can conclude that the correlation between certain indicators and their calculated values is traced. On the one hand, this suggests that the factors selected for the methodology are correct for assessing the level of workplace digitalization. On the other hand, there is interdependence between certain indicators of different stages, which may mean that some factors are more important for our methodology. This means that the weight of these factors in the total calculation should be greater than one. We assume that the factors that mentioned in the article are of the same importance number. We want to investigate in further research which of the factors have a greater influence on the level of digitalization. That is, the weight of the factors may change in further. So, we need to consider this in our future research.

Overall, the study shows the necessity of considering all four stages without neglecting any of them. This is due to the underestimation of the importance of the digital workplace. Moreover, this is the case now, when the organisation of remote management in the enterprise is becoming widespread and essential practice. Effective use of managers and subordinates' time allows the goals to be achieved, even in the absence of direct contact. The research aimed at improving the methodology for assessing the level of digitalization of the digital workplace and finding the best options for enhancing indicators is relevant and in line with the realities of today. The digital workplace is the future for most companies in the market and a tool that will help them succeed.

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