

Is It Possible to Assess the Potential of Older Workers in the Context of “Universal Digitalization”?

Irina Durakova
Voronezh State University
Voronezh, Russia
e-mail: durakova@econ.vsu.ru

Ekaterina Mayer
Voronezh State University
Voronezh, Russia
e-mail: starkavit@rambler.ru

Abstract—The article presents ideas about the potential of older workers in the new paradigm of successful aging, taking into account the overall digitalization. It is shown that the field of tension arising at the junction of two paradigms - sporting and ensuring a successful old age, can be resolved with the use of IT technologies. Ways to preserve the potential of older employees using cloud services are shown.

Keywords— *The potential of older employees, the paradigm of successful aging, aging in the context of digitalization.*

I. INTRODUCTION

Now, even for small businesses, the introduction of information technology into current business processes is not a challenge, but a necessary routine, without which it is impossible to stay afloat. Searching for advertising sites, platforms for finding employees, solving accounting problems are just a few of the current issues that are solved faster and more efficiently with the help of digital tools.

At the same time, although according to the value of the aging coefficient and the share of the “oldest” residents in the population structure, Russia is not included in the number of demographically old countries, such as Japan, the United States, the Scandinavian countries, at the same time, the prerequisites for the growth in the labor force of age personnel are getting stronger. The aging of the personnel of organizations is already accepted as a new reality and becomes a new normality.

In accordance with this, there is a need to study the capabilities of older workers, using employers, health authorities and workers themselves to prolong the successful working capacity.

II. PERCEPTION OF THE POTENTIAL OF AGED WORKERS IN THE PARADIGM OF SUCCESSFUL LABOR LONGEVITY

The relationship between the age structure of the company and the increasing digitalization has been obvious until recently. Older employees were often not considered a priority in advanced IT workplaces. However, the realities of the new normality are increasingly forcing us to move towards uniting two trends within the company: preserving the potential of

older employees and modernizing workplaces. All this will reorient hr-requests in workforce planning from creating a stream of candidates for retaining and retraining already hired employees, taking into account their potential.

A survey conducted among 774 HR directors showed that respondents believe that there is less turnover in the age group than in other age groups of personnel, a higher level of loyalty to the company, greater responsibility, and the presence of equal opportunities with other employees to acquire new skills. The presence of creativity and a penchant for innovation, a lower degree of absenteeism [1].

In addition to older workers who have become part of the strategic workforce in many countries, the management paradigm shift is also a new reality. "Organization - person - profit" - the structure and purpose of a long-existing reality, a feature of which was the "intermediate" position of the employee, which is possible with weak competition and lack of creativity in the conditions of constancy of the market segment once determined by the organization. In this case, the experience of the older generation of workers was in demand only "pointwise", including at workplaces with demand, but without supply in the labor market.

The intensifying competition has become a factor in a paradigm shift and its representation in the content of "person - organization - influence". The “locomotive”, the dominant variable, has become the person who provides the organization with a horizon of influence on the market for goods and services, as well as on the labor market.

The new time required correction of this formula as well. With the first and second variables unchanged, the goal and result of their combination are now designated by victory ("person - organization - victory"). It is no coincidence that the term "sporting" appeared in the designation of the paradigm, which characterizes the ability of an organization, as a team athlete, to explode, which is accompanied by success.

"Sporting" with the Olympic slogan "Faster! Above! Stronger"! in the management paradigm, it implies a supply of opportunities for solving problems that may not be planned and may arise unexpectedly, including with the emergence of new competitor. In accordance with this, a field of tension arises in the implementation of strategic and tactical tasks. On

the one hand, the employer must form a stock of knowledge, skills and abilities of his employees.

On the other hand, in the staff of the organization, according to the new reality, the change of staff is slowing down. An increasing proportion of the personnel structure will be occupied by older workers, for whom all the components of the Olympic motto are more difficult to implement than for young employees.

Therefore, it can be assumed that the coexistence of the paradigms of successful cadre old age and "sporting" is possible if older workers are singled out as a specific category for which the methods of implementing the functions of personnel management, adjusted relative to others, are used, including selection, adaptation, training, performance assessment, etc. potential.

The potential of employees is a multidisciplinary reserve of professional, methodological, managerial competencies, which, together with the characteristics of behavior, health and will, make it possible to effectively solve individual or team, routine or innovative tasks.

While retaining in general for the characteristics of all categories of personnel, the potential for success of the age groups still differs. Firstly, it depends on the dynamics of fluid and crystalline intelligence, the degree of the difference between biological and functional ages determined by physical and mental health, Secondly, it is accompanied by the effort of the employee's will, the desire and initiative for its implementation, confidence and motivation in achieving and repeating a high result. Thirdly, it assumes a health reserve. Fourth, it is subject to preservation and maintenance to a greater extent than development.

III. PERCEPTION OF THE POTENTIAL OF AGED WORKERS IN THE NEW PARADIGM OF SUCCESSFUL LABOR LONGEVITY

In assessing the potential of older workers, two approaches can be distinguished: inclusive, when the potential of employees is assessed based on the role or position held, and exclusive, when the assessment of the potential of an older employee differs in tasks and procedures from the assessment of the potential of young specialists [2].

When developing approaches and procedures for assessing the potential of older workers, it is advisable to take into account the following three blocks of aspects (table 1).

Table 1

Content and specificity of aspects taken into account when assessing the potential of older workers *

Aspects of capacity assessment	Content	Specificity
Block 1. Potential realizing time	- strategic potential - operational potential	For the assessment, it is necessary to know in what period of time the potential may be demanded. The worker's stock may be needed now or it will be needed in the future. therefore - Assessment of strategic potential (assessment for the future) is carried out

		to ensure the continued competitiveness - assessment of operational capacity (assessment to date) is carried out to fulfill urgent tasks When assessing competencies and motivation, it is advisable to take into account the horizon of the need for potential - operational or strategic, supply and demand in the organization of employees, motivational capabilities of the employer. The method has high predictive validity. At the same time, an unfavorable effect of the loser is possible, in this case those who received a negative assessment lose perspective for themselves and lose motivation to work. Also - preference in assessment is most often given to presentable employees who can present themselves in a favorable light.
Block 2. Development and motivation of an employee in assessing potential	First, is the level of competencies acquired before sufficient for solving problems? Second, is it possible to motivate the employee using the previous approaches to motivation?	When assessing competencies and motivation, it is advisable to take into account the horizon of the need for potential - operational or strategic, supply and demand in the organization of employees, motivational capabilities of the employer
Block 3. Methods for assessing potential	1. A capacity-based assessment center	The method has high predictive validity. At the same time, an unfavorable effect of the loser is possible, in this case those who received a negative assessment lose perspective for themselves and lose motivation to work. Also

		- preference in assessment is most often given to presentable employees who can present themselves in a favorable light.
	2. Testing:	It is necessary to reach a compromise between the desired and the possible. The employee will directly or indirectly reject the intrusion into her private sphere of life by any experts and, to a greater extent, those who intend to evaluate it through methods veiled in circles, blots and squares. The applicant's mimicry will remain undisclosed if the contradiction between the method of assessing the personality and her attitude towards this method are not overcome or reduced
	- performance tests	
	- intelligence tests	
	- personality tests	
	3. Interview focused on identifying and supporting capacity	All types of interviews are possible for use: structured, semi-structured and free. Predictive validity of the method - 0.14-0.19 (structured interview - 0.29; interview with a record of the candidate's responses - 0.30-0.47)
	4. Manager's assessment	There may be an illusion of objectivity, since the manager often independently determines the role of the employee for the future. Therefore, it is possible to adjust the assessment results to a pre-formed opinion.
Block 4. Subject of potential assessment	5. Self-assessment	In the absence of valid self-assessment methods, the effect of extremes is possible. Subjective assessment, on the one hand, allows the employee to make the right decision about the ability to perform certain tasks. On the other hand, it can be either overestimated or underestimated due to the personal

		characteristics of the employee. Therefore, self-assessment is effective as a preliminary stage for assessing potential.
Block 1. Time for realizing the potential	Organization-employer	Evaluation is carried out for the implementation of business objectives
	Employee (self-assessment)	The assessment is carried out to determine the employee's own potential and make a decision about further employment or the possibility of fulfilling operational or strategic tasks

* Created by the authors

The main task in assessing the potential of older employees is to understand their willingness to apply new methods in their work. Some empirical studies have found that there is a significant influence of the age structure of the labor force on technological innovation, forming an inverse U-shaped graph of the relationship between age and innovation [3].

On the part of employees, resistance to changes can be associated with fear of devaluation of accumulated intellectual capital after the introduction of IT technologies, unwillingness to invest time and effort in mastering new skills in connection with the expected imminent retirement or with a scarce aging model.

In turn, employers note the following difficulties in retaining older employees during the period of technological renewal of the company: unwillingness of older employees to change, inability to use new technologies, the need for a special multi-stage approach to training, age-related physical decline, the need to increase wages after training, the inability of managers to build correct communication with older employees [4].

The heterogeneity of the aging workforce in terms of health and ability highlights the importance of flexibility in the use of digital tools in assessing their potential. Abilities include all mental and physical abilities appropriate to the environment. For example, a decrease in visual ability can cause difficulties in reading and understanding texts written in small print.

If older people experience a loss of motor ability, available ICT will allow them to interact with a product or service without the need for fine motor skills or compatibility with assistive technologies. To compensate for cognitive decline, it is necessary to create accessible content that is easy to understand. Decreased social contact, leading to isolation and sometimes depression, is overcome by learning and educational opportunities, peer learning, and support for information exchange.

A Dropbox-commissioned study of 4,073 workers in the US, Europe and Australia found that older workers are adopting technology as quickly as their younger peers. Globally, workers 55 and older used an average of almost five forms of technology per week, compared with 4.67 forms per week for workers 18–34 years old. Young and older workers

were equally likely to use basic tools such as laptops, tablets, and smartphones [5].

Different generations prefer different ways of receiving and transmitting information. E-mail has become an almost universal form of communication, video calls have also become common in connection with the pandemic, but workers under 39 are more likely to use social networks and instant messengers for work communication. Older employees prefer face-to-face communication. It is important to discuss the introduction of new technologies with older employees, talk about their impact on their functions and motivation [6].

Information computing technology can provide new tools for collecting and analyzing data to increase the transparency of employee behavior and collect the results of their work.

Specially designed programs, for example, Life Options Profile, allow you to assess readiness for retirement by 20 parameters in six areas of life: career, health, finance, family, leisure, personal development.

Individual Directions Inventor measures emotional satisfaction from various areas of work and life, and allows you to identify unproductive patterns of behavior. Assessment tools such as DISC and StrengthFinders help identify strengths and growth areas. Online learning platforms such as General Assembly, Coursera, and edX offer a wide range of free and low-cost programs - right up to advanced learning - that can help older employees master the latest skills to expand their career opportunities.

IBM has developed a software toolkit to improve computer accessibility for people with age restrictions. The software dynamically adapts web pages to suit your vision and motor skills. There are also keyboard optimizers that make typing easier for people with tremors, arthritis or lack of control due to a stroke, tools for enlarging fonts and voice assistants [6].

The use of wearable technologies at work was introduced as a new form of employee assessment, the use of intelligent monitoring tools allows for self-monitoring and control to increase employee productivity and the productivity of organizations in accordance with their rhythms and needs.

However, the indicative situation that occurred in the Russian IT company Xsolla, which laid off 147 employees due to inactive participation in work chats and sending letters, established in big data analysis, underlines the existence of ethical problems associated with the use of digital technologies in assessing older employees.

For example, the use of wearable devices as intervention tools for health monitoring can have serious implications for employees in terms of individual responsibility, self-confidence, invasion of privacy and discrimination [7]. AI-powered remote monitoring techniques can be overwhelming if context and level of responsibility must be taken into account, increased stress among employees, created an atmosphere of mistrust, and compromised mental health.

The heterogeneity of the aging workforce in terms of health and ability highlights the importance of flexibility in the use of digital tools when assessing their potential.

Abilities include all mental and physical abilities appropriate to the environment. In this context, it is essential to consider the recommendations for the creation of an accessible and age-friendly environment.

For digital decisions to be credible, they must adhere to a number of principles: autonomy, confidentiality, transparency, reliability and consistency.

IV. IT TOOLS FOR PRESERVING KEY KNOWLEDGE OF EMPLOYEES

Creation of virtual databases is one of the main methods of storing key knowledge of employees. However, this is not just about corporate wikis, but about software that allows you to find senior employees with the necessary potential in a timely manner, even if they are already retired.

Senior employees planning to retire are offered a special program. Employees fill out the developed forms in which they describe their knowledge, accumulated by them during their professional life. This information is then summarized, entered into a database and provided to project managers around the world. When these managers have a problem that can only be solved with specialized knowledge, they search the database for former employees with the necessary skills. If the employee has these skills, then they are asked to join the project team for a short time.

With powerful search capabilities and sophisticated screening algorithms, online talent platforms can also speed up the hiring process and reduce the time people spend searching jobs. By aggregating candidate and job data across entire countries or regions, they can eliminate some geographic inconsistencies and provide overlaps that might not otherwise occur.

Finally, online talent platforms help to assign the right people to the right positions, thereby increasing their productivity and increasing job satisfaction.

ACKNOWLEDGMENT

The reported study was supported by the Russian foundation for Basic Research (grant No. 20-010-00263).

REFERENCES

- [1] S.J. Peterson and B.K. Spiker *Establishing the positive contributor value of older workers: a positive psychology perspective*. Organizational Dynamic, vol. 34, no. 2, pp.153-167, 2005.
- [2] H. Zacher, D. Kooij and M.E. Beier *Active aging at work: Contributing factors and implications for organizations*. Organizational Dynamics, vol. 47(1), pp. 37-45, 2019.
- [3] J. Meyer, (2008) *Older Workers and the Adoption of New Technologies*. Discussion Paper no. 07-050, [Online]. Available: <ftp://ftp.zew.de/pub/zew-docs/dp/dp07050.pdf>
- [4] S. Scudder, (2020) *Don't Ignore Your Older Workforce During Technology Change*. Talent Management & HR. [Online]. Available: <https://www.tlnt.com>
- [5] Z. D. Moriz, (2016) *Survey: Older Workers Are Actually More Comfortable With Technology*. [Online]. Available: <https://fortune.com/2016/08/07/older-workers-technology/>
- [6] B. Vilčiauskaitė, A. Savanevičienė and V. Navickas. *Managing older talents in the context of aging society*. Economics and Sociology, no. 13 (4), pp. 213-226, 2020
- [7] S. Segkouli, D. Giakoumis and K. Votis (2021) *Smart Workplaces for older adults: coping 'ethically' with technology pervasiveness*. Univ Access Inf Soc. [Online]. Available: <https://link.springer.com/article/10.1007%2Fs10209-021-00829-9>
- [8] K. Gurchiek (2016) *HR Can Help Prevent Older Workers from Becoming 'Tech Dinosaurs'*. SHRM. [Online]. Available: <https://www.shrm.org/resourcesandtools/hr-topics/organizational-and-employee-development/pages/keep-older-workers-tech-skills-relevant.aspx>