

Knowledge work as a key to sustainable development

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Abstract. The article considers the trend for growing number of knowledge workers in the western world and worldwide. Statistics on “white collar” jobs and jobs with “white-collar” tasks prove that in the near future two thirds of all jobs will be associated with the factor “knowledge”. With the respect to the current economic situation in Russia, when new industries should develop and the demand for “blue collars” is significant, it is stated that knowledge work is still required especially for organizing and ruling technological processes in the country. Digitalization led to changes in jobs structures and the necessity of transformations in talent management systems with the focus on attracting and retaining high potential human recourses. Current limitations also challenge the national economy which needs innovators to overcome difficulties and develop sustainably. In this aspect, increasing trend for knowledge work globally correlates with the national demand for talented knowledge workers whose contribution to economic transformation can play a crucial part in further sustainability of national economy.

1 Introduction

The transformation from an industrial to a service and on to a knowledge-based economy is one of the key developments of the past decades in developed economies. The service sector has been expanding rapidly. Therefore, job structures have changed. As Faix and Mergenthaler state, labor demands for manufacturing activities and primary services, which accounted for three-quarters in the 1990s, accounted only for two-thirds of total demand in 2010. Instead, secondary services such as advisory, management, teaching, as well as research and development are gaining in importance [1: 76].

This structural change to a service economy caused changes in the required skill level of the labor force. More than 10 year ago, in 2010 the proportion of higher-qualified activities (such as qualified research and development management, organization, etc.) already occupied over 40% of all professional-related activities; while the proportion of simple activities dropped [1: 77]. Dueck states that customers handle simple tasks on their own. For example, they enter their data for insurance policies and tax offices without clerks' help or carry out bookings themselves without visiting travel agency; however, if they need customized arrangements or specialized advice, they still need some assistance. Support from professionals, who are more capable than we are, is necessary in the fields which demand special knowledge, training, experience and expertise. Simple tasks can be done by

ourselves or by semi-skilled workers from the low-wage sectors as well as “mini-jobbers” (students, pensioners etc.) [2:88]. The gap between simple and complex tasks is growing. According to Oelsnitz et al., who stated in 2007 that “the relevant form of work in developed societies will thus be knowledge work!” [3: 37], this trend has been basically upward in the contemporary society and will be continuing in the future.

German Institute of Employment Research of the Federal Labor Office evaluated the share of knowledge workers in 2010 to be 40% [4: 3]. An OECD (Organization for Economic Co-operation and Development) report shows 3, 3% growth of this share in EU and the United States per year [5: 56]. Oelsnitz et al state the rising trend and suggest that about one third of all jobs can be defined as knowledge-based [3:35]. Only one third of jobs will be organized according to the industrial society standards, mentions the “Zukunftsinstitut” (organization that observes and describes patterns of the societal and economic change to enable individual and organizational decision making). It forecasts that in the near future two thirds of all jobs will be associated with the factor “knowledge” [1: 80].

Knowledge work can be classified. For example, International Standard Classification of Occupations (ISCO) has the definitions for “white collar” workers – “managers” and “professionals” at the 3- and 4-digit levels. Berg et al. considers them as jobs at the lower bound. The upper bound includes jobs associated with “white collar” work, mainly paraprofessional and clerical occupations. Based on this division, in 2023, International Labor Organization estimated that there are between 644 and 997 million of such jobs globally, representing between 19.6 % and 30.4 % of global employment respectively [6].

Thus, according to contemporary data, not only in the western countries but also in the global world the number of knowledge workers is significant. Anyway, the greatest employment rate knowledge workers have in high-income countries (35% of “white collars” and 54% of jobs with “white-collar” tasks, of all jobs). In upper-middle income countries there are 22-35%, respectively. In these groups women are well represented in knowledge work. Although the largest number of knowledge workers is in Asia and the Pacific (519 million), their share in total employment is less than 30 percent. In Americas, Europe and Central Asia, the share of knowledge work is close to a third (“white collars”) and a half (jobs with “white-collar” tasks) of all jobs [6].

In Russia, as the report of the Center for Labor Research of the National Research University “Higher School of Economics” in 2017 states, 62% of working Russians belong to “white collars” (mental work) and only 38% are “blue collars” (mainly physical work) [7]. It means that almost two thirds of them are engaged in knowledge work.

The purpose of the study is to define the demand for knowledge workers in Russia nowadays with the consideration to industrial challenges caused by numerous economic sanctions and limitations. Conceptions in the field knowledge work and talent management system are considered in order to focus on the current problems and strategies for sustainable development of national economy.

2 Materials and Methods

The methodological basis of the research includes the use of traditional scientific methods, such as review, description and grouping, as well as special methods – context and statistical analysis of studies and data provided; identification of distinguishing characteristics. The materials chosen represent studies of foreign and national scientists within approximately 20 years – since the end of the 90s to the present. Such terms as “knowledge work”, “talent” and “talent management system” are considered in the context of different approaches. Data analyzed are provided by studies considered in this paper as well as by different organizations: Institute of Employment Research of the Federal Labor

Office (estimating the share of knowledge workers) [4], OECD report for the EU and the United States (estimating the growth of the share) [5], International Standard Classification of Occupations (ISCO), International Labor Organization (estimating global employment) [6], "Zukunftsinstitut" (prognosis) [1: 80], Center for Labor Research of the National Research University "Higher School of Economics" [7].

To compare the trend of growing number for knowledge workers globally with the current situation in Russia, taking into account national economic situation, comparative analysis based on the contemporary studies of Russian researchers as well as interviews with experts in the field of economy, labor market, vocational education and legislation is applied. Studies of western researchers are analyzed in order to apply their implications for the status of knowledge work to the current situation on the national labor market in Russia, with consideration to the challenges and changes which it currently undergoes. Digitalization as an integral part of the sustainable development is also analyzed concerning transformation of national labor market and demand for innovative talent management system. The relevance of the study is due to the context of modern challenges and requirements for sustainable production processes.

3 Results and Discussions

3.1 Theoretical concepts and definitions

Knowledge work is still not a well-defined term. Surawski notes that it is used to describe activities of workers who create and analyze information; however, its interpretation can depend on cultural context and include combinations of different tasks. Initially, three types of knowledge workers were distinguished by Nonaka and Takeuchi [8: 171]:

1. Practical knowledge workers;
2. Knowledge engineers;
3. Knowledge managers.

The difference between the groups is the following: workers from the first group have special experience, expert status or external contacts which allow them to form the "operating core" of knowledge work; "engineers" ensure that knowledge are used; and "managers" coordinate all processes and work between two groups mentioned above.

The fourth group can also be defined – knowledge consultants, brokers, creators who provide "symbolic analytical services" (products based on symbols: words, data etc.). Those are lawyers, journalists, PR managers, scientists, business consultants who solve problems using analytical or rhetorical "tools" [9: 194 f.].

Between "knowledge workers" and "creative workers" is made a differentiation, but it is more an analytical distinction than a real one. Creativity means the ability to come up with ideas, however, the ideas do not come from nowhere. They are always based on some knowledge a person possesses or on some new combination of knowledge in a human mind, new ways of its implementation. Of course, knowledge workers can deal with knowledge in different ways, and each type of knowledge worker engages with the innovation process at different points. Creative knowledge workers come up with a creative idea first, then the innovation process starts (here it is defined as the realization of ideas). Thus, innovators are those knowledge workers who shape concepts, set innovation process in motion and create value [1: p.80]. They are crucially important for sustainable development of companies taking into account digitalization, ecological issues, globalization and other modern challenges. That is why in order to reveal students' innovative potential, western business educators have been designing new concepts for MBA courses since the 90s [10].

We suppose that an equation symbol can be set between innovators and talents. The term “talent” has many definitions. For example, according to German intellectual tradition, the term “talent” has quite negative significance, unlike in English. The concept of “genius” in German is much broader: although a talented person creates great things, they are “only short-lived and limited to a particular area” [1: p.83]. According to Schopenhauer, “genius” is the excessive ability of the intuition that allows a person to comprehend the world in a more objective and purer sense; the strength of talent lies «more in its greater fluency and clarity when it comes to methodically handling <...> knowledge of the world” [1:83].

In Russian, there is similar attitude. As the famous literary critic Belinsky states, talent is a lower grade of the ability to create, whereas “genius” is a superior one. “A genius always opens with his creations a new world of reality, unknown and unsuspected by anyone before him <...> In other words: genius captures and fills with itself an entire area of contemporary reality / brilliant talent – one corner of it” [11].

Faix and Mergenthaler suppose that the concept “talent” may be used inflationary nowadays, and it can be a temporary trend (“buzzword”). Anyway, the opinion about the usefulness of “talent” when it comes to methodically handling of particular tasks is a clue to understanding the usage of this term in the contemporary management theory and practices, i. e. in such a concept as “talent management” [1:83].

There are a lot of definitions for “talent management” which refer to such key concepts as attracting, retaining, developing, and deploying talent [12]. Kashtanova and Lobacheva give the following explanation: talent management is an integrated system that performs such functions as attracting, employing, developing, and retaining people with the necessary knowledge, skills, abilities and attitudes to contribute to the achievement of the operational and strategic goals and objectives of an organization. An employee with High Potential (HiPo) is called a “talent” within an organization. As a rule, HiPos are creative; possess soft skills, characteristics of a leader, and ability to innovate. The framework of the “talent management” includes involving of employees, productivity management, rewarding, however, the main objectives are attracting external talented employees, detecting internal HiPos, their developing, retaining and measuring of productivity for all the company activities in the field of attracting HiPos [13].

Academia offers a vast number of studies on talent management. The interest to this subject is explained by the relevance of human resources for economies of different countries. At the end of the 1990s the McKinsey & Company consultancy concluded that the search for the best entrepreneurs, employees, graduates and scientists would be “a critical business challenge and fundamental driver of corporate performance” in the future [1: 83]. The purpose of that study was to explain the importance of winning “the war for talents” – the demand for talented employees.

3.2 Digitalisation of the labour market

Nowadays, when companies, societies and the most kinds of human activities in general are being affected by process of digital transformation, digitalization influences organizations not only in terms of their internal operations or processes but globally. This challenge includes a change in the way any work is done and leads towards significant implications for organizational talent recruitment and leadership tactics, corporate culture and behavior [12].

Digital transformation is not only about investing in technology to digitize an organization, it involves changes “in the concept of the business model, the organizational culture and the company’s value chain” [12].

The impact on the nature of the jobs and the way people are managed is significant. So, there is a need to design new strategies for talent management in the digital age.

Researchers emphasize that the focus is currently on the weight people have in digital transformation [6]. Due to digitizing of all processes, it became clear that traditional talent management system has to be changed in order to fit the new digital environment.

It is a common fact that individuals may work better or worse depending on their environment: the team they work for, the leadership exercised by managers. There are a lot of factors that influence employees' attraction and performance. Above all, creating a culture and environment that respects the work-life balance of employees and ensures their well-being. A lot of characteristics should be considered in the talent management system to attract, retain and deploy employees. Researchers mention employer branding, access to training and development opportunities, sustainable skills development and leadership transfer, flexible work environment, individualized and holistic approach to coaching, protecting and maintaining the company's reputation on the Internet, creating social proof and others [13.]. It should be mentioned that with the digital transformation, management systems including talent management underwent change processes based on technologies such as artificial intelligence, big data, HR analytics, which made it easier for business models to transform [12].

If we consider current situation in Russia, digitalization of the country has been developing rapidly. According to Berg and Gmyrek, in Russia, the share of the population not using the internet is less than 20% (Fig. 1) [6].

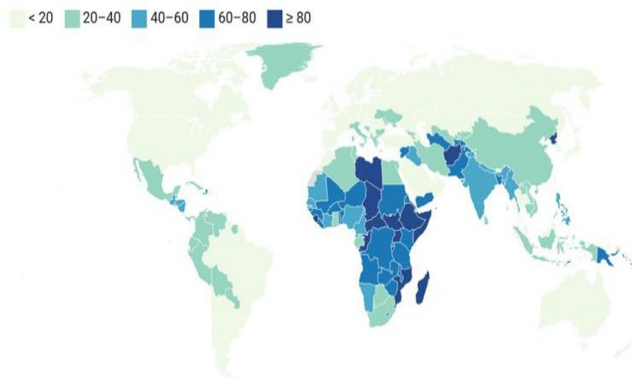


Fig. 1. Share of population not using the internet in 2023 (Calculating of Berg and Gmyrek [6])

In compliance with the study, all indicators of the Digital Economy national program in 2022 in Russia were exceeded. For example, scheduled 65% of socially significant services were to be transferred to electronic form, but in fact 99.97% were transferred. Moreover, the planned share of households with broadband Internet access was 80%, but in fact it turned out to be 86.1% [14].

Thus, digital transformation in Russia is a reality which influences all spheres of human lives. Generative artificial intelligence and LLM-based tools increase human performance on time-consuming tasks, however, some jobs will probably be lost within this process and occupations will be transformed as tasks evolve. The consequences will depend on how these transitions are managed in the world of work currently.

Social dialogue at the workplace is very important while the technological system is being designed and adapted in workflows. Redeployment and training of employees are needed as well as consultation and negotiation between employers and workers. Ensuring that working conditions are not badly affected can help mitigate job loss. Investing in workers' digital literacy with a focus on youth can benefit companies as well as employees [6].

3.3 National aspects

According to PhD, Associate Prof. Karacharovsky, engineers and qualified workers are mostly needed nowadays in Russia because the most relevant problems are developing production and replacing the import. It is a real challenge because since the mid-80s until 2020 the economy lost about 10 million workers in industry. They were no longer needed due to the fact that a lot of necessary industrial products and parts were imported. Those workers moved to service sector, commerce and civil officers. This means that tectonic shifts in the labor market are needed: a return flow of 10 million engineers and workers into the industrial sector should be provided [15].

The need for IT specialists has naturally grown proportionally to the development of production. Integrated management system for automated production, customer service automation (CRM), supply chain automation (SCM) need to be created and implemented. But the point is that the need for IT specialists will grow exactly to the extent that this is required for production automation purposes. That is why first of all, new industries need to appear.

Hence, the main task is to analyze the inter-sectorial balance of labor resources correctly; understand where the gaps are, what specialists are in demand, and to build effective talent management systems. It is very important to emphasize that not only “blue collar” workers are needed but managers and professionals who can organize and rule technological processes in the country [15].

4 Conclusion

The progress evolves worldwide in such a way that there are more and more “white collar” workers, knowledge workers. Moreover, some professions are simply turning into “white collar” jobs and “blue collar” workers are significantly “whitening”. For example, an operator working with numerically controlled machines is almost an engineer, although he maintains these machines at the same time. Thus, the demand of knowledge workers in the age of IT technologies is huge.

Due to necessity of industrial breakthrough in Russia, the need for “blue collars” increases, however, knowledge workers, especially HiPos and innovators, are vital to the sustainable development of national industries and therefore, the whole economy.

That is why talent management system should be developed with all due care and adapted to new digital requirements in order to ensure availability of HiPos on the labor market, in all spheres of national economy. Since coining the term “war for talent”, talent management has become a key point of organizational success and essential for the sustainability of organizations. Without transformation of talent management system, the economic challenges of the future cannot be met in a sustainable way [12], and this thesis is still true and applicable to current national realities. Managers, who rule industrial processes ensuring production, transforming and creating facilities as well as talented knowledge workers in other fields, are extremely needed because of challenges which the Russian Federation has to overcome. In this context, global trend for increasing the number of knowledge workers is relevant for modern Russia to the same degree, not only due to the need of HiPos, innovators, “knowledge” engineers and others to develop industries, but also due to general change of job structures where the factors “knowledge”, “talent”, and “innovation” dominate over routine approaches and define the performance and productivity of all working processes.

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