

WORK TRANSFORMATION IN THE INFORMATION SOCIETY

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Abstract:

The paper presents the basic conditions, positions and related with them trends in work processes in the information society. Particular attention is given to telework as an innovative form of work, based on modern information and communication technologies, and also it considers the impact of ICT and globalization on contemporary and future work processes as well as the structure of employment.

Key words: *information society, the labor market, telework, ICT*

INTRODUCTION

In the modern world, information and communication technologies (called in short as ICT) play a crucial role, while knowledge is the primary resource conditioning for the development of countries, regions, organizations and individuals. This results with changes in the nature of socio-economic ties, in particular, the work process, as the basis of social structure, undergoes constant and gradual transformation.

The observed impact of ICT is expressed through an easier and faster access and transfer of information [1], thus bridging the problem of distance and time. This suggests that the dominant organizational solution can become in these conditions a company based on a flat organizational structure, which, because of its breadth, will be stapled by telecommunication network [2, 3]. Furthermore, in accordance with the thesis of this paper, the changes caused by the increasing use of ICT in the economy must also affect the labor market, leading to the specific changes. This may mean that in the modern economy the demand for the types and forms of work and professional qualifications, corresponding to the challenges of ICT, will change. Therefore, it is expected that employees, wishing to adapt to changing work processes, will be required to demonstrate possession of many attributes, a wide range of features and characteristics, such as a broad knowledge and competence, an ability and motivation for continuous learning and development, an ability to perform under time pressure, an ability to process large amount of information, an ability to co-create and share knowledge, willingness to change jobs (occupational mobility), interdisciplinarity, flexibility, creativity, independence and high interpersonal skills. Additionally, one can expect that in the existing new conditions, posed by information and communication technologies, geographical mobility, which is the tendency to change residence in connection with work, will get another dimension.

ICT AND LABOUR MARKET

The effect of increasing the pace of economic and social development, including improving the quality of peoples life, against the sheer volume of cases and obligations to which they must cope, is today assigned to information and communication technologies. They facilitate access to information and knowledge. This results with an increase in resource productivity in the economy and allows its greater speed and efficiency. In this way, these technologies represent an opportunity for market expansion of companies and entrepreneurs.

In the consequence of presented conditions, the era of the so called information society begins. It is based on the processing of huge amounts of information and the creation, development and knowledge sharing. This complex social process requires – for it's proper conduct – the wider school, university and continuing education with support of ICT [4]. These technologies transform both the economy and the society. They create for example new forms of work and business, as well as have an impact on solving important social problems in the area of health, safety, mobility and employment. While using information technology, it becomes possible, in particular, the creation of jobs in the regions and local communities affected by unemployment, because employers may be located somewhere else [4].

As pointed out by M. Castells, the technological and organizational work transformation - as a consequence of the information society development and promoting the usage of ICT – is revealed by people occupying new jobs in the occupational structure. In particular, there is observed the growing importance of so called information professions (i.e. managerial, technical and expert), reduction of the population of skilled workers and factory operators in positions and also a rapid increase in the number of office workers and traders. He notes that an indicated tendency for increasing content of the information professions in the structures of employment of developed societies, exists

regardless their cultural systems, political and historical circumstances of the process of industrialization i informatization [5].

Taking into account the impact on the employment structure, the base model of the information society, corresponding to the above position, is characterized in Table 1.

Table 1
Basic characteristics of the model of information society in the sphere of employment

Lp.	The structure of employment in the information society - basic characteristics
1.	gradual reduction of jobs in agriculture
2.	steady decline in traditional forms of employment in industry
3.	slow decline in employment in industrial production, mainly with regard to skilled workers
4.	producer services development, especially for business and social services, particularly health and education, located in a prominent place of employment growth
5.	increasing diversification of jobs in services
6.	rapid increase in managerial, professional and technical occupations
7.	multiplication of jobs in low-skill occupations, especially in the retail trade, services and office workers category
8.	simultaneous increase in the number of jobs at the higher and lower level of occupational structure
9.	relative increase in the occupational structure as a result of a proportionately greater increase in jobs requiring higher skills and education than jobs from lower-level

In the light of conducted considerations, it is clear that for today's workers and employers it is important to use skills in ICT. Difficult to resolve remains the issue, how the use of modern information and communication technologies will affect the labor market. Indeed, one can expect that the impact will vary depending on the specifics of the profession. Generally speaking, on the one hand, one can expect - through the use of ICT - to improve efficiency and productivity, on the other hand the likely liquidation of some of the workstations and the emergence of demand for new professions is possible. As the result of automation of the production process and simple office tasks, most likely - as can be expected - there will be demand reduction for physical work and routine mental work, and will rise or will occur demand for mobile workers without routine, because it will be harder to replace them by computers. This particularly regards the specialists who are able to handle modern equipment with information technology and professionals in the field of maintaining human relations, especially with customers due to adopting the modern enterprises to marketing orientation. Mentioned mechanisms can cause a mismatch between the labor market supply structure and the structure of labor demand, i.e. structural unemployment [6].

Highlighted trends make it necessary to identify and promote professions and occupational specialties, for which there is or soon will be demand on the labor market. The state should also conduct monitoring of surplus and shortage occupations. Through these activities, new technologies should not lead to job cuts, but only to the trans-

formation of work and employment in the new economy. Hence there is the need to make changes in the structure of occupations. In particular, changes on the labor market should lead to the preference change in choosing fields of study, as well as the change in study directions by universities [6]. Apart from changes in the structure of occupations, there is also perceived employment forms change, which is visible in more and more popular, customized, flexible forms of employment such as: work for a specified period, part-time work, temporary work, work on the replacement, hire employees, work on call, job sharing, work at home, telework, or self-employment [7].

In general stating, considering both the results of theoretical investigations, as well as empirical studies, the imbalance between supply and demand occurring on the labor markets can be reduced through the use of flexible forms of employment. Labor market flexibility, especially flexibility of employment and working time, is therefore one, among others, way of reducing unemployment used in the European Union. Above all, labor market flexibility is forced by essential global megatrends, which, in addition to technical and technological progress, include the processes of globalization, i.e. creation of the single world economy [8].

In the literature there are two extremes, not to say extreme positions on the consequences of processes of globalization and the development of ICT for the labor market [9]. According to the first one, which corresponds to the vision formulated by J. Rifkin, indicated processes result in a dramatic decrease in demand for labor, especially for wage labor, because in the modern world there is no longer - as shown by supporters of mainstream of neoclassical economics - offsetting the decline in employment caused by technological progress through increased demand for labor as a result of the increase in productivity in the economy and the growth in global demand. According to this author, the "end of work" should be expected [10]. In line with the second position, globalization, strongly associated with technical and technological advances, becomes the driving force behind any changes that are beneficial for individuals, as well as the society. It emerges, among others, with improvement of health conditions, pollution reducing, higher income from work obtaining, educational opportunities expanding, including continuing education and changing structure of labor demand, rather than it's size [11]. This makes it that - according to the second position - some jobs will disappear, i.e. become superfluous, and in their place there will appear new ones. In these conditions, it becomes necessary not only to change the qualification profiles of employees, but also to introduce new forms of organization of work processes, based on the usage of ICT.

In summary, on the basis of the presented approaches, it is unlikely that there was a total, immediate elimination of work by modern technology. It may involve, to some extent, only selected areas of activity, mainly related to the production and transfer of information, and to a lesser extent, areas that require direct human intervention and are based on interpersonal interactions, such as the provision of various services. At the same time, ICT, causing the transformation of work processes, create some new opportunities to provide jobs. In particular, an important factor, contributing positively to the creation of new jobs, becomes telework. Its development is a matter of interest of the governments of the European Union Member States, seeking to promote the development of innovative forms

of work with the use of modern information and communication technologies [4]. Their implementation requires adequate society preparation to functioning in a changed conditions, adapting to new forms and methods of work.

TELEWORK AS A NEW FORM OF WORK PROCESSES ORGANIZATION

The term "telework" (am. telecommuting) was first used in 1973 by the American physicist Jack Nilles, who invented this concept considering the significant cost savings for the U.S. economy when replacing part of commuting with the transmission of information. This concept has gained over time a big popularity, primarily in the country of it's origin, where acts the American Telecommuting Association, but also in Europe, particularly in the Nordic countries (Sweden, Norway, Finland and Denmark) and the Netherlands.

The popularity of telework can be considered particularly in the context of information society development. It should be mentioned that the development of telecommuting depends largely on the progress of given country in creating and using ICT. The use of these technologies can trigger many local initiatives, contributing to reducing disparities in development of different areas, creating new employment opportunities for living there people.

Telework or other words telecommuting is a new form of work, significantly changing, through the use of ICT, two fundamental aspects of work, i.e. work time and space in which work is performed. Therefore it can be done, in principle, at any time and place, as it is provided remotely via information and communication media, without having personal contact with the employer. Thus, teleworking can be provided anywhere, as long as there is a possibility to save and send work that is done in electronic form. Moreover, it can be done independently, as well as telecommuters can work together in networks, carrying out specific tasks as so called virtual teams. This allows the separation of workers from the traditional workplace, creating new

opportunities for cooperation in space and the acquisition of information due to greater speed of information processing and transmission. That all can be done by [4, 6]:

- teleworking at home, performed by employees employed on a full or part-time, contract teleworkers and teleworkers based on self-employment (freelancers),
- teleworking in premises of an employer from which the employee e.g. serves remotely clients,
- teleworking in the call center, which is the so called virtual office equipped with ICT, enabling people to work much closer to their place of residence than place of business, if they do not want or can not work at home,
- mobile teleworking, when employees do not have the main work place and carry out their tasks with IT technology, remotely contacting company headquarters e.g. while traveling to clients or visiting them,
- alternating teleworking, where the employee performs some part of tasks at home, and the remaining in an employer's premises.

According to the European Commission, telework is a method of organizing and / or performing work, in which the employee works outside the workplace (employer's premises) or place of the work effects delivery for a significant portion of work time, providing employer with the work performance using information technology and data transmission technology, especially the Internet. In turn, J. Nilles considers telework as each type of substitution of traveling related to work through information technology, which is a kind of labor movement to workers rather than employees to work [12].

Telecommuting offers many benefits for both employers and employees, and even for the whole society, but it involves also some disadvantages [4, 6]. The most important of them are summarized in Table 2.

Table 2
Advantages and disadvantages of telework

Benefits for employers	<ul style="list-style-type: none"> – increasing of the productivity of employees, their motivation and job satisfaction, resulting from the possibility to choose the most convenient time and place of tasks execution and a sense of greater responsibility for performance, – expanding and improving communication between employees and management team, – fewer levels of management (flattening the organizational structure), – a possibility of a broader customer orientation, – an opportunity to reduce office space, or even abandon it for the so called virtual office, – an ability to easily acquire highly skilled workers that are missing on the local labor market, or are much cheaper elsewhere, – networking with people with unique competencies on a global scale.
Benefits for individuals	<ul style="list-style-type: none"> – reducing stress, cost and time spent commuting to work, – improving the organization of family life through the flexibility of combining it work.
Benefits for society	<ul style="list-style-type: none"> – an increase of professional activation, particularly regarding women raising small children and people with disabilities, – a decrease of the pollution and less congested road infrastructure, – reducing the excessive concentration of population in large cities.
Disadvantages for employers	<ul style="list-style-type: none"> – a need to bear a significant expenditures associated with equipping the new jobs with the appropriate hardware and software and ensuring data security, – difficulties in controlling employees, – weakening of the network of interpersonal contacts with superiors, as well as with colleagues and external stakeholders of the company.
Disadvantages to individuals	<ul style="list-style-type: none"> – a sense of isolation and loneliness, – a fear of losing the job and marginalization.

The implementation of teleworking in the company is a technical problem, but it also requires deep changes in the sphere of organization and management, labor law, or in the mentality of employees, to reduce its drawbacks revealing in the practice. It is important that the organization undertaking the initiative to introduce telework has developed an appropriate organizational culture, promoting continuous high degree of interaction and communication between employees, exchange of information and organizational knowledge creation. It is also necessary an appropriate selection of teleworkers, i.e. employing in this form people who meet the relevant eligibility requirements and have a personal predispositions for being a teleworker.

MOBILITY OF WORKERS IN THE INFORMATION SOCIETY

Workers mobility can be viewed in two dimensions – as occupational mobility, representing the frequency with which workers change occupation and geographical mobility, associated with changing jobs, coupled with the change of residence within the country and even between states. Changes in the profession – as already stressed – are enforced by the dynamics of the economic system in which it appears and disappears demand for certain kinds of work. This implies a need of retraining, acquiring new skills, knowledge and competence and requires greater openness to change and motivation for lifelong learning. Geographical mobility becomes particularly important in regions and sectors where high unemployment exists, while in others there is a marked shortage of workers with specific qualifications. It may also gain an importance in the context of globalization. In this context, namely the question arises whether there is a global workforce and global labor market as an obvious consequence of the existence of the global economy, using information and communication technologies that allow to overcome the problem of distance and time. The answer to this question is by no means easy, because the workforce remains highly associated with the culture of the region, community or family. However, the more the process of globalization is deepening due to information and communication technologies, the more similar are the qualifications and job technology in each country, irrespective of different wage levels and the existing social protection systems. This causes a possibility of choosing by companies more cost-effective solutions for their business, such as a commission or transfer of tasks and functions to other, lower-cost regions, or own foreign branches, connected with company headquarters by telecommunication network. Thus, the spread of ICT brings consequences for the processes and working conditions in different countries. It can be stated on this basis – as does M. Castells – that there is a global interdependence of the workforce in the information economy [5].

SUMMARY

As results from conducted in this paper considerations, the transformation of the work process in the information society is a consequence of ICT application on an increasing scale, which redefines work processes and employees roles in these processes. This changes the structure of employment and, in particular, leads to the emergence of demand for certain new occupations, while declines the importance of some occupations from the past. That raises specific needs in terms of monitoring, identification and promotion of the relevant professions. It should also be underlined that –

in the new technological conditions – a large number of jobs may be eliminated due to the introduction of work processes automation, especially in less complex activities carried out routinely. In turn, on transformed workplaces, one may receive an increase in qualification requirements, including also certain features and characteristics of workers needed for the operation in the information society, such as the ability to process large amount of information, the ability to co-create and share knowledge in a virtual environment, interdisciplinarity, flexibility and creativity. Present circumstances cause that the promising form of work processes organization, from the viewpoint of the generated economic benefits, is, based on ICT, telework, which - properly implemented - is associated with a large savings and ensures high flexibility of work processes, as it allows to shape them depending on the needs of the employer, resulting from rapidly changing market conditions.

As pointed out by M. Castells, information and communication technologies substantially transform the form and nature of work and organization of production, irreversibly changing the very concept of work. He argues that induced by ICT and stimulated by global competition restructuring of companies and organizations leads to a profound transformation of work, visible in the individualization of labor world in the labor process. At the core of this transformation are mainly tendencies to increase flexibility in the dimension of: time, space, stability and mutual rights and obligations of employee and employer. Moreover, he indicates the change of the trend of work salarysation and production socialization, dominant in the industrial era, for the segmentation of work and fragmentation of society by a new, social and economic organization of work, based on information technologies, and thus set on the decentralization of management, work individualization and adapting markets to individual customer needs [5]. This means that ICT provide tasks coordination in real time, through an interactive network, distributed among distant from each other employees, working in different departments of the enterprise or even in external companies. In this way, it is possible, in particular, in line with modern marketing concept, maintaining relationships and carrying on dialogue with customers, allowing to the widest extent personalize submitted offer [13].

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