

UDC 331.5:004

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CHALLENGES AND PERSPECTIVES FOR THE DEVELOPMENT OF HUMAN RESOURCE MANAGEMENT AND LABOUR RELATIONS IN THE INFORMATION SOCIETY

The main trends in relations development in the global and Ukrainian labour markets under conditions of society's transformation are considered in the article. Development of non-traditional forms of employment, deepening of structural shifts in labour markets, growing of the "precariat" as a separate social class, increased requirements to human capital quality and greater need for the related investments are pointed out. Peculiarities of human resource management under the influence of information and communication technologies (ICT) and digital tools are studied in detail. The role of ICT industry as a driver of a modern economy and a catalyst of transformation processes in a labour market is defined. In this context, analysis of the dynamics and structure of the national ICT sector in professional and gender terms, as well as assessment of the level of wages in the industry, are carried out. Recommendations for the formation of the state employment policy and labour market regulation in Ukraine with regard to the challenges of the information society are presented.

Keywords: *human resources, labour relations, non-traditional employment, information and communication technologies, information society.*

Левицька О. О. ПРОБЛЕМИ ТА ПЕРСПЕКТИВИ РОЗВИТКУ МЕНЕДЖМЕНТУ ЛЮДСЬКИХ РЕСУРСІВ ТА ТРУДОВИХ ВІДНОСИН В ІНФОРМАЦІЙНОМУ СУСПІЛЬСТВІ

У статті досліджено основні тенденції розвитку відносин на глобальному та українському ринках праці в умовах трансформації суспільства. Звернено увагу на поширення нетрадиційних форм зайнятості, поглиблення структурних зрушень на ринках праці, зростання чисельності «прекаріату» як окремого соціального класу, підвищення вимог до якості людського капіталу та потреби інвестування в його розвиток. Вивчено особливості управління людськими ресурсами під впливом інформаційно-комунікаційних технологій (ІКТ) та діджитал-інструментів. Підкреслено роль індустрії ІКТ як драйвера сучасної економіки і каталізатора трансформаційних процесів на ринку праці. У цьому контексті проаналізовано динаміку і структуру розвитку вітчизняного сектору ІКТ у професійно-гендерному вимірі, а також оцінено рівень оплати праці в галузі. Представлено рекомендації щодо формування державної політики зайнятості та регулювання ринку праці в Україні із врахуванням викликів інформаційного суспільства.

Ключові слова: *людські ресурси, трудові відносини, нетрадиційна зайнятість, інформаційно-комунікаційні технології, інформаційне суспільство.*

The tremendous development of information and communication technologies (ICT) has lifted the global community to a much higher level of advancement. It is called the fourth information revolution which has resulted in an information explosion profoundly affecting all aspects of human life. New opportunities and challenges in the digital age are determined by the shift from industrial to digital society (more commonly used as the information society – the concept developed by Daniel Bell, Radovan Richta, James R. Beniger, Marshall McLuhan, David Riesman, Yannis Veneris, Alvin Toffler, Michael Buckland and others at the end of the '60s and later on). The idea and the very term of "information society" were introduced by the Japanese anthropologist, the professor at Kyoto University Tadao Umehara in 1963 in his article on the evolution of the information-based society theory. By that he meant the society being developed mainly by using different ICT as the main drivers of socio-economic progress. It should be noted that "information society" has got many similar concepts and terms, for instance, "post-industrial society", "digital society", "knowledge society", "network society", "techno society", etc. These concepts are close but not synonymous. The most discussable one is the term of "knowledge society", which is considered as a higher level of development of the information society, and is aimed at not only using but transforming the information into resources (one of which is knowledge) and effective actions [3, p. 57]. Among those, who often criticize the information society concept, UNESCO is on top. This

international organization stands for promotion and development of the idea of the knowledge society, declaring its concern about the boundedness and narrowness of "information society" [7, p. 27]. But the author believes that these two concepts complement each other because the information society is a functional unit of the knowledge society. And the most essential here is the fact that informatization and big data make a huge impact on economies and humanity in general.

The aim of the article is to analyse the pressing challenges, threats and opportunities for human resource management and labour relations in terms of the information society development; to consider peculiarities of non-traditional forms of employment and new requirements for employees; to evaluate the growing labour market in ICT sector of Ukraine.

The influence of ICT on human resources (HR), labour markets and related issues is in focus of research of many foreign scientists (D. Acemoglu, D. Autor, A. Coad, F. Webster (USA), D. Tapscott (Canada), Ch. Dustmann, J. Ludsteck, U. Schönberg (Germany), R. Gizdra, J. Krzywicki (Poland), Ashima Goyal (India)) and Ukrainian researchers (E. Libanova, O. Hrishnova, A. Kolot, N. Huk, Z. Shylnikova, Yu. Dreval, O. Melnyk, et al.). All the scientists identify and analyse the technology-induced transformations of labour markets and social and labour relations at different levels. But the rapidly changing information society and economy based on knowledge present new challenges and prospects for both employers and employees. Therefore, current trends

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regarding this issue should be constantly monitored to provide data on the actual state of affairs.

As proof of the fact that information and knowledge are treated today as one of the most important factors of business activity, scientists and practitioners widely use such concepts as the information (knowledge) worker, digital labour force, digital HR, digital (virtual) workplaces, remote work (job), and so on. At present, there are many cloud-based communication tools (Tonido Workspace, Pyrus, Slack, TeamWox GroupWare, Zoho Cliq, Confluence, Priority Matrix, RationalPlan, etc. – up to 200 collaborative software applications or solutions including free software) significantly changing approaches to the corporate management (particularly in terms of HR), increasing its effectiveness and coherence. Hereby new technologies contribute to the labour market and relations in it. Digitalization, and specifically the on-demand economy, leads to atypical work and employment. This is a consequence of the development of new forms of entrepreneurship, which are being undertaken in real-time mode via the Internet to provide services and processes of organization and production management and coordination of workers at a considerable distance (remote work). Instead of traditional enterprises (offices and factory sections), virtual ones are being more and more organized. They are a composition of spatially dispersed electronic workplaces linked to the global computer network. Thus, it is obvious that doing work at a distance exerts influence on the task assignment and on relations between employers and employees. Due to digitization, the work process is less determined by place and time and more by autonomy along with better monitoring of effects.

Ukrainian and international experience on this issue reveals different trends in labour markets and social and labour relations under the influence of the information revolution. The latest and most significant ones are presented in Table 1.

Today's transformation of the labour market and relations in it is being evidenced by the transition from traditional employment to non-traditional forms. Comparing them the following characteristics should be pointed out. Traditional employment relates to the fixed-time work in a constant place declared by the labour law. Traditional offices are considered to be a place meant for direct work, meetings with managers, subordinates and colleagues. Such form of employment usually deals with long-term relations on a full-

time basis with remuneration based on time spent, on the load and sphere of activity. Non-traditional employment, also called non-standard or atypical employment, is often understood as a part-time work (or on-call work) without a fixed-time schedule but with the fixed-term contracts (usually a temporary work during a project period). Such

Table 1

Current trends in human resource management and labour relations under the influence of ICT*

Trend	Description
The rapid increase in the number of virtual enterprises	<ul style="list-style-type: none"> • new forms of business • new services provided via the Internet • e-commerce development
Shifts in employment structure	<ul style="list-style-type: none"> • increase in the share of self-employed people in comparison with a share of hired workers • transition to a part-time work • growing number of “information” (“knowledge”) workers, who use information to assist in making decisions or taking actions, or create information that informs the decisions or actions of others
Development of non-standard forms of employment	<ul style="list-style-type: none"> • HR leasing, outstaffing, outsourcing • project freelancing • telecommuting: web developing, web design, content-editing and so on
Changes in the nature of work	<ul style="list-style-type: none"> • trend towards intellectualization
Precarisation of labour	<ul style="list-style-type: none"> • spread of precarious employment referring to a precarious existence, unstable lifestyle and work without guarantees and reliable income, especially in connection with a “non-standard” employment • growth of the “precarariat”, as a social class, in many respects due to representatives of the so-called creative professions (IT specialists, programmers, etc.)
Growing investment in HR	<ul style="list-style-type: none"> • increased requirements for the employees’ competence (adaptability to changes, flexibility, broad skills, creativity and innovative thinking)
Development of digital HR or e-HR (digital tools and applications helping human resource management on)	<ul style="list-style-type: none"> • e-recruitment • e-evaluation of HR • e-learning (online learning platforms and e-books) • e-leadership and virtual collaboration (managing and working worldwide)

**Compiled by [1, p. 37; 4, p. 195-197; 6]*

workers might not be directly employed by the company to which they provide their services, their employment falls under contractual arrangements involving multiple parties. Generally, it is a remote work at home or place convenient to each worker with wages based on the results. Offices are meant only for informal meetings and for meetings with partners and customers. Thereby, traditional and non-traditional forms of employment differ from each other by time, place, term, occupation type, remuneration, office functions and other criteria.

Regardless of the obvious benefits of non-traditional employment (in most cases – flexible work pattern, higher wages, rewards for performance, higher education support, home- or out-work etc.), this form of career has also serious weak points. It is often defined by unstable, informal and other negative relations in the labour market. Moreover, part-time, temporary employment provides limited access or even non-access to social and labour guarantees for employees:

1. Temporary jobs deprive employees of many benefits connected with duration of work at one place, for example, seniority bonuses, social insurance, etc.

2. An employee, who has actually worked under harmful and dangerous conditions, would not lay a claim to the right to preferential pensions, since he/she is officially on the staff of recruitment agency (agency worker), where there are no harmful working conditions.

3. Precarious employment often deprives workers of social and labour guarantees (in particular, employment and job security, workplace safety, social security and guarantees of remuneration, gaining of certain skills by education and training). Such employees do not get a sick leave, maternity benefit, and parental leave. Systematic medical examinations and vouchers for sanatorium-resort treatment also remain unregulated.

It is noteworthy that sometimes “traditionally employed” people do not work under reliable working conditions. Although Ukraine has quite good labour and social security laws, there are weak legal frameworks and justice to ensure adequate protection of the workers’ rights and prevent them from arbitrary actions of employers or state officials. For this and many other reasons, labour markets in Ukraine are currently undergoing different structural and functional transformations. Technologies increasingly displace human labour resulting in involuntary unemployment. But at the same time, a lot of new activities and occupations appear worldwide. Plenty of them deal with ICT and biotechnologies and get more and more popular today. Here are a few top occupations forming a new class of “information” (“knowledge”) workers: cognitive computing engineer/machine learning specialist, blockchain engineer, GPU cluster engineer, artificial intelligence operator, specialist in adaptation of human skills to artificial intelligence, digital detective, cyber security specialist, data architect, augmented reality designer, crowd campaign specialist, master in social crafting, bioengineer, geoeconomist, nanomedicine specialist and so on.

Thus, there is a distinct trend in the global and Ukrainian labour markets regarding the growing number of workers engaged in the industry of information and communication technologies (commonly used as IT specialists). Ukrainian ICT industry is showing a rapid growth: at present Ukraine is Europe’s leading country for ICT outsourcing and software development destination. ICT has become a strong, highly developing industry accumulating big investment funds and involving many high-skilled workers. The ICT sector transforms labour markets by creating new jobs and workplaces (in production and sale of ICT and equipment, in software development and distribution, in ICT service, etc.), setting new requirements to employees, increasing competition in the international labour markets. Today, due to this industry, national economy competitiveness is being formed.

The ICT labour market in Ukraine shows different types of dynamics. As can be seen from Fig. 1 [2, p. 172] and Fig. 2 [5], the total number of workers engaged in ICT sector of Ukraine declined in the period 2013-2016: from 299.9 thous. pers in 2013 to 275.2 thous. pers in

2016. It should be noted that the total number of workers involves all types of occupation (IT specialists, service staff, support personnel, etc.) and employment status (employers, employees, self-employed and other

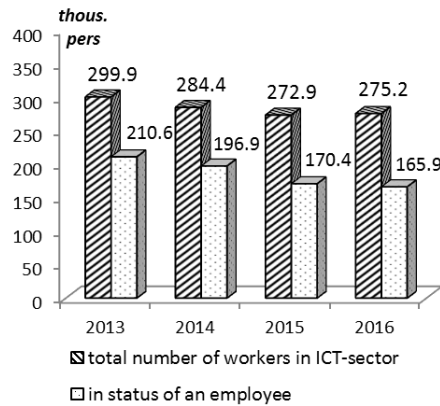


Fig. 1. Ukrainian ICT industry growth in 2013-2016*

*Collected by [2, p. 172]

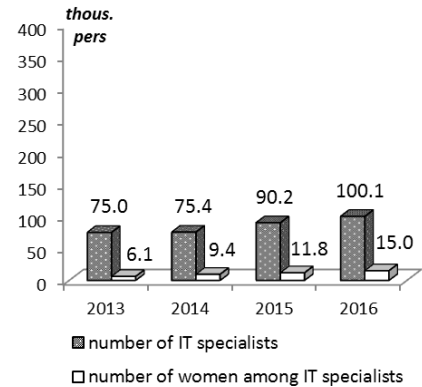


Fig. 2. Dynamics of the number of IT specialists in Ukraine in 2013-2016*

*Collected by [5]

workers). Relevant lessening of the number of persons in status of an employee was also found out (210.6 thous. pers in 2013 and 165.9 thous. pers in 2016 make a decrease in 21.2%). It can be explained by the growth of the self-employed persons working for themselves and earning income from a business they carry on. As for IT specialists, Ukraine’s industry currently contains up to 100,000 professionals and is expected to double this number by 2020. Interestingly, there is a steady upward trend in the number of IT specialists. During the period analysed this figure increased in 33.5%, but still, the market is understaffed: demand for IT professionals exceeds supply.

The factor of gender is also significant in forming the HR potential of Ukrainian ICT sector since the share of women among IT workers grows every year (the trend goes from 8.1% in 2013 to 15.0% in 2016). In most countries, women tend to be paid less than men, especially in case of traditional spheres and forms of employment. But in ICT industry, women usually get higher wages and gender disparity is less observed.

In comparison with the other sectors of economic activity, ICT is a rapidly developing industry, creating and implementing different types of innovations all over the world. The human resource management in ICT companies is also very flexible and progressive as such companies offer many opportunities for professional growth and further training. One of the undeniable benefits of a career in “technological sector” is a level of remuneration. It should be noticed from Fig. 3 [5] that the average monthly earnings in Ukrainian ICT industry in May of 2016 were equal to approximately 2,000 U.S. dollars per IT worker (while the average monthly earnings in Ukraine, in general, are only 175 U.S. dollars). The sum varies from 1,450 U.S. dollars for project managers to 3,150 U.S. dollars for senior front-end developers (without taxes and social contributions). But still, Ukrainian IT specialists are less paid than the same specialists abroad. For this reason, Ukraine remains the most attractive country in respect of the human resource outsourcing and offshoring.

Summing up, it is noteworthy that the positive impacts of ICT on HR, labour market and relations in it are distinctly observed. Therefore, the human resource management policy

in Ukraine should support and promote the implementation of ICT and new management approaches. To be effective, such a policy must be aimed at:

- creating new workplaces in different spheres, including ICT industry (the growth of Ukrainian ICT industry in 2016 was 12% [5]);
- developing alternative (non-traditional) forms of employment with their advantages;
- simplification and speeding up the managerial functions (including more efficient recruitment, e-learning, ICT in the processes of employees' assessment, digital applications for human resource management), effectiveness increase in a decision making process;
- considering virtual mobility as an alternative solution to the problem of territorial mobility.

When setting down the priorities and main tasks of the corresponding state policy, the policymakers should also take into account:

- growing competition between the remote and traditional forms of employment;
- an absolutely obvious problem of estrangement, which is inevitable in case of a remote work, or absence of an office;
- cyberslacking and cyberloafing at work;
- excess in information resulting in health problems (for example, the burn-out syndrome, which is included in the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) under problems related to life-management difficulty).

In general, high adaptability to changes, flexibility, and therefore intense training are required today, because of a labour market transformations and growing demand for qualified workers with broad skills, diverse creativity and innovative thinking. These requirements must be taken into account at all stages of human capital formation and human resource development.

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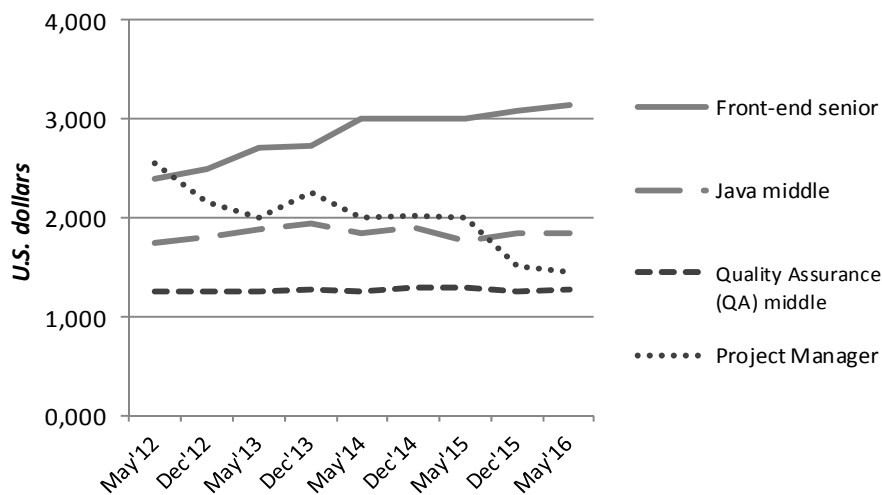


Fig. 3. Average monthly earnings in ICT industry in Ukraine in 2012-2016 (by IT occupations)*

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