

INTELLECTUAL WORK AND ITS EVALUATION IN CONDITIONS OF POSTINDUSTRIAL SOCIETY FORMATION

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A number of countries are now moving from an industrial into a postindustrial phase of society. The main difference between an industrial and a postindustrial society is that the sources of innovation in a postindustrial society are derived increasingly from the codification of theoretical knowledge, rather than from «random» inventions. Every society in human history has been dependent upon knowledge, but it is only in recent years that the accumulation and distribution of theoretical knowledge has come to the fore as a directive force of innovation and change.

The main aspects of postindustrial society formation were considered by the leading scientists such as D. Bell, M. Castells, A. Giddens, K. Kumar, A. Touraine, F. Webster in their research papers. The labor relations in conditions of world economic growth were analyzed by M. Benewitz, L. Edvinsson, J. Mincer, A. Toffler, A. Zucker.

Modern studies show that an intellectual worker became the center of the economic system in postmodern society, that's why the main purpose of our research is analysis and evaluation of intellectual work in the transition to a new type of postindustrial economic relations.

A postindustrial society is basically an information society. Exchange of information in terms of various kinds of data processing, record keep-

ing, market research and so forth is the foundation for most economic exchanges. Thus, just as capital and labor frame the problems of an industrial society, so information and knowledge frame the problems of a postindustrial society. The information and knowledge are two indivisible components of a single, unified, cognitive universe. The processes of information production take place in the minds of individuals, not in natural or artificially maintained «exterior» locations (this immediately places the investigation of the flow of information into a «human» and «social» frame, while technology becomes a secondary consideration). Knowledge and information seem indeed to be major sources of productivity and growth in advanced societies (the changes that occur in postindustrial society are shown in table 1).

In conditions of developing postindustrial society a new type of specialist is becoming increasingly important. Now brainworkers and knowledge workers will be able to be the leading productive labor force in the global economy. The main features of intellectual worker were named by A. Toffler [2, p. 255]. He noted that a new type of specialist is creative, educated, highly qualified and well informed.

Table 1

Comparison of the characteristics of the industrial and postindustrial society [5]

Modes	Industrial society	Postindustrial society
Economic sector	Goods producing; manufacturing of durable products and non-durable products; construction industry	Services (transportation, trade, finance, insurance, education)
Transforming resource	Created energy (electricity, oil, gas, coal, nuclear power)	Information (computer and data-transmission systems)
Strategic resource	Financial capital	Knowledge
Technology	Machine technology	Intellectual technology
Skill base	Engineer, semiskilled worker	Scientist, technical and professional occupations

There is, increasingly, a process of globalization of specialty labor. That is, not only highly skilled labor, but labor which becomes in exceptionally high demand around the world and, therefore, will not follow the usual rules in terms of immigration laws, wages, or working conditions. This is the case for high-level professional labor: top business managers, financial analysts, advanced services consultants, scientists and engineers, computer programmers, biotechnologists, and the like. But it is also the case for designers, performers, and political consultants.

Now, as practice shows, the division of employees in so-called «blue collar workers» and «white collar workers», which was used until recently, is no longer sufficient. That's why a new category of labor – «gold collar workers» appeared in the twenty first century. They are a new breed of workers, and they demand a new kind of management. Intelligent, independent, and innovative, these employees are incredibly valuable. They are lawyers and computer programmers, stock analysts and community planners, editors and engineers. They differ from their less skilled white-collar counterparts – bank tellers, bookkeepers, clerks, and other business functionaries, because this type of workers is able to do complex intellectual work in the postindustrial relation system, using initiative and creativity.

Human characteristics, including the ability for creative, intellectual activity, are considered to be a capital now. In modern studies [4, p. 189–190] scholars observe such phenomena as trade of individuality – i-commerce (commercialization of intellectual capital), that is increased by people confidence in their own individual talents and willingness to benefit from this.

Intellectual capital is the value that the employees of a business provide through the application of skills, know-how and expertise. Human capital is inherent in people and cannot be owned by an organization. Intellectual capital also encompasses how effectively an organization uses its people resources as measured by creativity and innovation. Managing intellectual capital requires working at multiple organizational levels and at different levels of complexity and uncertainty.

Intellectual capital is one of few individual assets that could be estimated, because education

is basis of its formation. Investments in education are easier to evaluate compared with other forms of investments. The revenue from higher education is calculated as the difference between the earnings of those employees who have completed college, and earnings of those employees who have only secondary education. That's why the rate of return is considered as profit rate and become the main regulator of the investment distribution among various types and levels of education.

According to the theory of human capital, salary consists of two main parts: the first part is those cash flows (earnings) that people can get without education and the second part is revenue return from educational investment. Expenses as a form of investments include two basic components: direct costs, which are equal to education costs, and indirect – lost opportunities, which are equal to revenues that person can get during the period of education. Internal return rate is such discount rate when benefits and costs, associated with education, become equal.

There is another approach based on estimation of production functions parameters that depend on the level of individual education, working life, length of time worked out and other factors. The development of this class of functions is associated with the name of J. Mincer. He proved that in this model the coefficient of education variable is equivalent to index of internal return rate. The scientist empirically demonstrated the dependence between level of education and salary rate. J. Mincer mentioned that 60 % of differences in labor income depend on the influence of three factors: education, experience and number of working weeks.

In our opinion, the model of getting second job or education offered by M. Benewitz and A. Zucker [6, p. 106–109] should explain the individual behavior in conditions of postindustrial society formation. This model describes the situations when individual's choice of getting new profession is caused by the possibility of career growth, and, consequently, expectations of higher income. M. Benewitz and A. Zucker approach is also suitable when human behavior is motivated by probable risk of unemployment or income reduction. Importance of using these models is

defined by new requirements such as regular accumulation, improvement and diversification of knowledge and skills which are placed on employees in postindustrial society.

On the basis of priorities for social reproduction human intellectual capital and laid in it a creative component become more valuable for the knowledge-based society. Intellectual pro-

fessions are taking the dominated position in the postindustrialized labor market. For example, in the USA the rate of intellectual labor force employment is near 85 %, in the UK – 89 %, in Japan – 90 %. Due to the complex intellectual work brainworkers and knowledge workers receive the highest salaries in the global labor market (fig. 1).

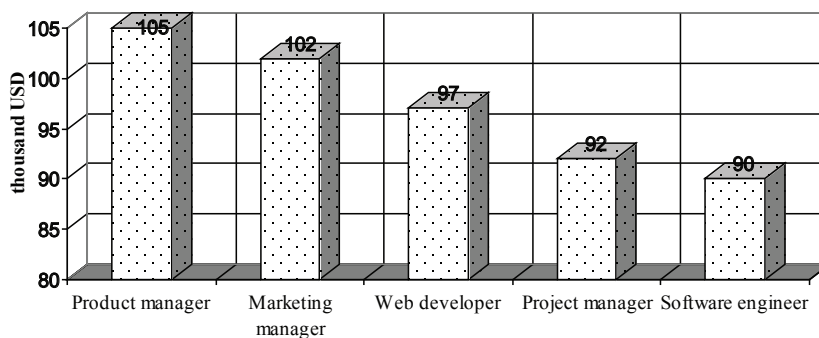


Fig. 1. Average annual salaries of intellectual employees (selectively) [8]

Individuals invest in human capital over the whole life-cycle, and more than one half of lifetime human capital is accumulated through post-school investments on the firm. This happens either through learning by doing or through formal on-the-job training. In a modern economy, a firm cannot afford to neglect investments in the human capital of its workers. In spite of its importance, economists know surprisingly less about the incentives and returns to firms of investing in training compared with what they know about the individual's returns of investing in schooling. Similarly, the study of firm investments in physical capital is much more developed than the study of firm investments in human capital, even though the latter may be at least as important as the former in modern economies.

In this context firms interested in improving the competitiveness and effectiveness of their own business are actively investing in human capital. The modern experience of organizing and stimulating labor force has a sufficient number of examples that reflect the processes of raising the qualification level of employees or training in the workplace. For example, in the USA leading companies use the system of «payment for qualification and experience» (fig. 2). Thus, employee, who is getting a new job (profession),

gains extra bonuses to the basic salary rate. In addition, knowledge that employee received during the trainings must be implemented into company's production process.

At the same time, the composition and structure of knowledge-related investment is clearly changing. Nowadays, three elements of such expenditure are analyzed mainly, both in microeconomic and macroeconomic terms: R&D investment, software expenditure and expenses related to higher education. The USA represented 44 % of the human capital investments, the EU accounted for 28 % and Japan for 17 %. R&D spending recorded the fastest growth rate in the USA (5,4 % per annum); the rate was 3,7 % in the EU and 2,8 % in Japan. In the developed countries total investments in trainings at workplace are rather high in comparison with the volume of investment in formal education [1].

The existence of high rates of private returns to education and training provides an incentive for individuals to invest in human capital. However, the benefits of education and training may not be restricted to the individual, but could spill over to others as well so that the gains to the economy as a whole (the social return) could exceed the returns obtained by the individual investing in human capital (the private return).

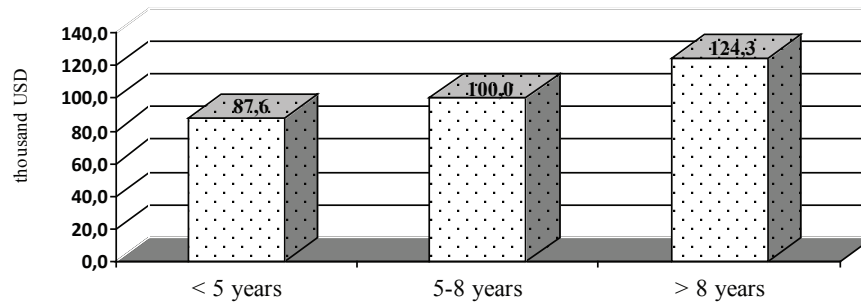


Fig. 2. Average salary of intellectual worker by years of experience [7]

At the postindustrial stage of society development the intellectual rent became one of the main factors of business structures competitiveness. The intellectual rent is the result of talent and initiative of scientists, inventors, engineers, managers and entrepreneurs who can pretend on the bulk of profits. This rent is the main stimulus for increasing innovation activity.

There are different types of intellectual rent: technological rent (belong to the entrepreneurs who have carried out basic or enhance innovation, applied principally new high-technology); managerial rents (connected with the most effective methods of production and marketing management), informational rents (belong to the designers, manufacturers and suppliers of information technology, the creators and operators of

radio and television programs, software, Internet web-sites). Intellectual rent is a form of economic implementation of the various types of property in intellectual resources and innovative products.

The practice of rent relations are well developed in the countries – world economic leaders. It is realized through the personalized approach to each of the specialist (scientists, engineers, programmers and other similar categories of employees) that are needed for the enterprise or organization. The volume of the intellectual rent is determined individually by the contract between employer and employee. The biggest technological companies, such as «Apple Inc.», «Google Inc.», «LinkedIn Corporation» pay enormous salaries for their «gold collar workers» (fig. 3).

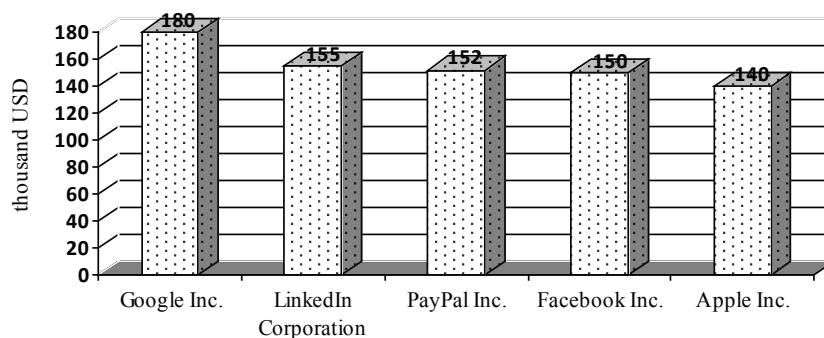


Fig. 3. Annual salaries of the top-paid software engineers in the most powerful technological companies [8]

These approaches were also applied in Ukraine, but yet mechanism of using intellectual rent doesn't work properly due to lack of stimulating demand function. Despite the fact that our country is endowed with great intellectual potential, it doesn't transform into goods and services production. Low innovation activity of domestic enterprises in the real sector of economy affects

unrealized potential of intellectual workers and lack of demand for their skills in Ukrainian labor market.

As we have recently mentioned [3, p. 221] in the current conditions of global economic process, taking place against the background of active postindustrial changes, unsolved problems of the Ukrainian science, such as migration of

intellectual capital, shortage of educational investments, can cause much worse consequences than the shortfall of intellectual rent generated by Ukrainian brainworkers. Developed countries, creating comfortable conditions for intellectual work, especially for scientists, will pretend to gain the main part of global intellectual rent. The intellectual capital, as a result of labor force mobility, can easily overflow from one place to another. So, if a particular country creates appropriate conditions for intellectual activity, it probably becomes the center of world science.

Ukrainian labor force is characterized as highly qualified and skilled, but the level of salary is much lower than in developed countries. That's why political and economic instability has led to rapidly increasing labor migration, in which both skilled and unskilled workers leave our country in order to find more reliable sources of income.

The Ukrainians are quite eager to leave their home country to find a better job, bigger income or prestigious education. At the same time, brain drain depletes human resources and eventually degrades the country's economy. When highly skilled workers choose to emigrate, the country loses a chance to return its investments for training these workers. Another problem of emigration is an uncontrolled outflow of qualified labor force. According to the State Statistics Service of Ukraine, 7 million of Ukrainians currently work abroad.

The leading researchers [1] outline that Ukrainian government should stimulate intellectual process inside the country. Ukraine has enough conditions to become a country where rents should work effectively and create «rent-stroke», based on intellectual development, intellectual capital, «knowledge-based economy».

In conclusion it should be noted that knowledge and information seem to be the major sources of productivity and growth in postindustrial society. The new economy would increase the importance of occupations with high knowledge content in their activity. Managerial, professional, and technical occupations would grow faster than any other occupational position and would constitute the core of the new social structure. Despite the general recognition that intellectual resources are leading in the economic growth, Ukraine, with considerable intellectual potential, still develops

without substantial use of R&D results, while developed countries receive 80–90 % of GDP from the production and exporting the high technology products. One of the most significant reasons is the imperfection of labor relations; their discrepancy with imperatives of postindustrial development, which, as modern practice shows, is strictly followed by all countries – economic leaders. This situation require the deep theoretical, methodological and practical research related to solving problems using the system of social return ability of individual creative activity.

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