Intellectual employees’ resources management of innovative industrial enterprises in the digital environment

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Abstract. The essential factor determining the innovative development of the digital economy is the intellectual one. Purpose of study: to clarify peculiarities of employees’ intellectual resources management and to propose a management system model adequate to the identified specifics. An empirical study was conducted from the infrastructural-reproductive approach and the results were obtained: 1) classification of different organizational levels of employees’ intellectual resources management at industrial enterprises; 2) identification of various types of personnel policy corresponding to a certain level of organization of management of intellectual resources of employees; 3) assessing the impact of organizational levels of employees’ intellectual resources management to employees’ intellectualization and results of innovation; 4) arguments of critical conditions for effective management and simulation of employees’ intellectual resources management system at innovative industrial enterprises; 5) model of system of management of intellectual resources of employees of innovative industrial enterprises is proposed. The results of the study are useful and necessary for the formation and development of a theoretical and methodological basis for improving the organization of personnel management of innovatively active subjects of the Russian economy.

Key words: personnel, management, intellectual resources, industry, innovative enterprises, digital economy.

1. Introduction

This stage of technological evolution is both as a challenge as a "window of opportunities" determining strategic vector of modern industry development in the international scope including national spheres of human resources, where there is a hard problem of insufficient number of high intellectual and innovative competent employees in many developing industrial areas. Under circumstances, the sought result of industrial human resources management is the qualitative employees’ development aimed at innovative result, i.e. to improve connected with operating activities knowledge, skills, experience integrated into qualification level determined with professional competencies in the innovation sphere.

As a result, there is a necessity to revalue targets of industrial enterprises management, particularly in terms of personnel management on the basis of innovative development priorities raising management interest to the intellectualization of personnel and employees’ innovative competencies development on the basis.
Findings generated and presented in the article have been obtained under the influence of a number of related scientific areas actively developing in recent years. They are, for example: post-industrialization and innovational development of economy [1-6]; new institutionalism [7-10]; innovative management [11-17]; human resources development [18-22]; human and intellectual capital [23, 24]. The nearest preconditions for the employees’ intellectual resource management theory development were made in R.E. Lucas works [1], B.A. Lundvall [2], R. Solow [4], J.A. Schumpeter [5], K.D. Arrow [6] and others who studied the peculiarities of knowledge impact and innovations on the economy growth.

It should be noted that international and Russian theory and methodology of human resource management, though being presented by a variety of concepts including concepts focused on modern aspects of management due to technological and structural changes in the economy on the innovation basis, but they do not give a sufficiently clear idea of the specific administrative problems in the area of innovation competencies development and employees’ intellectualization addressed to the problems of diversification and technological modernization of the industry, and it is an actual scientific problem.

Thus, impossibility to ensure effective human resource management of industrial enterprises in new economy based on traditional approaches developed for the conditions when the present-day industrial enterprises of innovative types already cannot implement their activities, so it determined the research objective, concluding at employees’ intellectual resource management simulating of innovative industrial enterprises on the basis of infrastructural-reproductive approach. Main objectives of a research:

1) develop the theory of personnel management based on the modern direction of innovation theory, innovative enterprises, companies;
2) justify methodological approaches to the formation of a system of management of the development of the intellectual development of the personnel of innovative industrial enterprises;
3) to propose a model of the system of management of development of intellectual development of personnel of innovative industrial enterprises.

The relevance of scientific issues and insufficient research into the management of the intellectual resources of the staff of innovative enterprises determined the choice of the topic, purpose and objectives of the study, the results of which are presented in this article. Findings allow to investigate, to design and to implement appropriate management systems and mechanisms into the management practices of industrial and production human resources, with their help to develop employees’ innovative competences targeted to positive attitude towards the renewal and creative destruction in the interests of diversification and technological modernization of the industry.

2. Methods

The study as a whole (at the stages of solving all its tasks) is oriented towards a dialectical approach to the study of patterns of formation and development of socio-economic systems, methodology of system analysis, as well as a logical approach (formal and mathematical logic), involving objectivity and comprehensiveness of consideration, not contradiction, sufficient justification.

At the initial (organizational stage of the study) to justify the scientific idea and the central problem of the study, the theoretical and practical significance of its solution, which allow to specify the purpose, tasks, object and subject of the study, to determine the axiom and the working hypothesis of the study, the methods of analysis, synthesis, comparison, as well as axiomatic and idealizations used within the framework of the general geological approach are relevant for use.

Further, in the process of accumulation of information, factorological, empirical and statistical material, it is necessary to carry out scientific observation on the basis of non-complete statistical observation using the statistical method of investigation of the main array of sample population. Analysis of trends updating the formation of the intellectual infrastructure of technological development of industrial enterprises in conditions of diversification and technological modernization of the modern Russian economy is carried out on the basis of a systematic approach using methods of
analysis, synthesis, systematization on the basis of economic and statistical methods of statistical summary and grouping, presentation of statistical data, ranking.

To analyze methodological approaches to the formation of the system of management of intellectual resources of innovative industrial enterprises and to justify the infrastructure-reproduction approach, evolutionary, process, as well as functional approaches implemented by methods of analysis, synthesis, comparison and classification are used.

The conceptual design of the model of the system of management of intellectual resources of innovative industrial enterprises is based on the principles of infrastructure and reproduction approach. The proposed concept is based, in total, on: methods of system analysis and scientific modelling as part of the study of the intellectual infrastructure of technological development in the integrity, unity and interconnection of its constituent parts; Economic and statistical methods (grouping, typing, building of series of dynamics, determination of ratings, etc.) for the purpose of analysis and synthesis of statistical information, identification of trends and peculiarities of scientific and technological development of industrial enterprises; Calculation and analytical method when performing analytical calculations; Graphical method for rendering the obtained results.

3. Results and Discussion

3.1. Justification of approach

The study of employees’ intellectual resources management specifics led to the conclusion of sufficient diversity of management approaches in this area. For example, they are represented in research in the field of innovative and developing HR management. This is revealed in the scientific works of such Russian researchers as: V. G. Zinov [25], A. Y. Kibanov [26], Yu. G. Odegov [27], V. A.Spivak [28]. In general, the peculiarity of identified approaches both as in Russia as abroad is their development within certain conceptual trends (Figure 1) they are applied to:

a) human resource management (developing HR management (employees), HR innovative management);

b) management of various intellectual "objects" of the economy (information and knowledge management, intellectual property, tangible assets, intellectual assets, intellectual resources, intellectual capital, intellectual potentials).

Reasons to methodological experience of human resources managing (developing and innovative) on the one hand, and on the other hand experience in intellectual "objects" management (employees’ intellectual potential, intellectual capital), are peculiarities of economical nature of employees’ intellectual resources as an object of management. To be more exact it is due to two-dimensional measurement of employees’ intellectual resources, though formed by a set of employees’ intellectual nature (knowledge, skills, abilities, experience, competencies), and it allows to consider them as an intellectual resource component, but they are not separable from employees.

There are no «ready» methodological approaches to the study of employees’ intellectual resources management allowing taking into account the need of reproduction of intellectual resources and also comprising the reproduction process into innovative enterprise cycle as infrastructure of intellectual-competitive support among known management approaches within versatile problematic of intellectual resources management.

As a result, an infrastructural-reproductive approach has been offered to study and to manage employees’ intellectual resources management of modern industrial enterprises (Figure 2).

Infrastructural-reproductive approach to employees’ intellectual resources management of modern industrial enterprises is based on three main theoretical and methodological aspects:

a) refined methodological basis as a synthesis of developmental and innovative approaches to the employees’ management, as well as approaches to employees’ intellectual potential and intellectual capital management;
b) the author’s reproductive interpretation of employees’ intellectualization in successive stages of planning and forecasting, formation and development, using and transforming employees’ intellectual resources into economical potential of an innovative industrial enterprise (Figure 3);

c) impact considering of socio-economic conditions and factors caused with current megatrend in a form of developing postindustrial technological structure of new sixth-generation.

Figure 1. Synthesis of methodological approaches as a basis of infrastructural-reproductive approach to employees’ intellectual resources of modern industrial enterprises.
STAGE 1. Forecasting and planning employees’ intellectual potential: determining the enterprise needs for current (future) period in a definite level of employees’ intellectual potential

STAGE 2. Forming of employees’ intellectual potential: HR selection, short-listing, and making high potentials for implementing innovative plans of the enterprise

STAGE 3. Development of employees’ intellectual potential: employees’ intellectual mastering according to the innovative enterprise needs

STAGE 5. Transforming of employees’ intellectual potential into economical potential of the innovative enterprise

STAGE 4. Usage of employees’ intellectual potential into innovative process of the enterprise by means of employee’s’ innovative activity maintenance

**Figure 3.** Structure of employees’ intellectualization reproductive cycle.
3.2. Content of approach
Specificity and originality of the proposed infrastructural-reproductive approach are associated primarily with the reproductive interpretation of employees’ intellectualization of modern industrial enterprises, involving its infrastructural inclusion as a service-support into the innovation cycle, thus providing intellectual and competence support of innovative processes that will enable to provide scientific and technical products transformation based on the results of fundamental and applied studies into a market product with new consumer properties.

So, the proposed infrastructural-reproductive approach to the employees’ intellectual resources management study of modern industrial enterprises allows to consider employees’ intellectualization not as an isolated reproduction process, but as included into the innovation cycle of the enterprise as an infrastructure ensuring the formation of employees’ necessary innovative competencies. The approach has an extraordinary opportunity to solve problems based on its specific management in the field of study, the main are linked to ensure expediently balanced reproduction of employees’ innovative competencies based on the intellectual donation (donation of employees’ intellectual resources). The main program-target value of the proposed infrastructural-reproductive approach is to organize employees’ intellectual resources management based on the innovative result and allowing to achieve the necessary level of employees’ competence in innovative sphere.

The content of infrastructural-reproductive approach is presented in table 1. Presented elements and their characteristics (type, function, features, benefits, tools, and limits) have important meaning for the approach identification as a specialized one in employees’ intellectual resources management of innovative industrial enterprises and forming respective management systems.

Table 1. Contents (basic elements) of infrastructural-reproductive approach to formation of employees’ intellectual resources management system of innovative industrial enterprises

| Element       | Characteristics                                                                                                                                 |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| **Type**      | Program-targeted, oriented to innovative results                                                                                             |
| **Function**  | Study of employees’ intellectual resources management of innovative industrial enterprises and mastering of employees’ management organization system of the enterprise on the base |
| **Tools**     | Economic assessment of the studied indexes parameters level that characterizes management results                                               |
| **Features**  | - integration of management environmental factors;                                                                                             |
|               | - economic assessment of the surveyed management characteristics;                                                                             |
|               | - formalization of the management object;                                                                                                       |
|               | - identification of the management subject, its specifics;                                                                                      |
|               | - development of management methods;                                                                                                           |
|               | - forming of system models and management tools;                                                                                               |
|               | - management organization algorithmization                                                                                                |
| **Benefits**  | - help to reduce fragmentation and segmentation of the research study subject methodology;                                                   |
|               | - focus on resource needs of the innovation process;                                                                                           |
|               | - employees’ intellectualization is considered as independent management object in the author's reproductive interpretation;                     |
|               | - respectively universal with respect to different employees’ categories of modern industrial enterprises;                                      |
|               | - predetermined with conditions of occurring social and economic transformations due to the sixth technological mode formation                  |
| **Limits**    | in-house level of innovative industrial enterprises                                                                                           |
3.3. Generalization, systematization, modeling
The main prerequisites for defining needs of in-house employees’ intellectual resources management development in the system of corporate management of innovational industrial enterprises are:
- necessity to develop strategy and tactics for employees’ intellectual resources management;
- quite a wide range of specialized functions for employees’ intellectual resources management;
- need to improve information-analytical support of process of employees’ intellectualization;
- necessity dictated by economic expediency, to raise management decision quality in relation to employees’ intellectualization process;
- possibility of reducing the degree of uncertainty and risk when implementing innovative projects in the enterprise;
- necessity to coordinate interactions of many different enterprise units; their activity is connected with employees’ intellectual resources;
- specificity of tools and methods of employees’ intellectual resources management;
- possibility of increasing the efficiency of distribution and usage of employees’ intellectual resources;
- real opportunity of multiplication of enterprise income from efficient use of employees’ intellectual resources in innovative processes.

Obtained during the study notions on the specifics of employees’ intellectual resources management of innovative enterprise allowed to propose principles of classification and to identify the basic characteristics of the employees’ intellectual resources management system (EIRMS) (table 2).

Table 2. The basic characteristics of the employees’ intellectual resources management system of innovative industrial enterprises

| Kind of characteristics | The system characteristics |
|-------------------------|-----------------------------|
| 1. Significance and content | Infrastructural-reproductive system of employees’ intellectual resources management in the priorities of the enterprise innovation development |
| 2. Stage of development | Forming |
| 3. The degree of interaction and dependence from the environment | Open: the operation involves using of certain resources of the environment for development of employees’ intellectualization, causes the release of innovative products into the external environment |
| 4. The adaptation degree to the environment | Adaptive (flexible): structure, the inter-system organization of management, resources |
| 5. The organization level | Complex, structural |
| 6. The level of management | Managed (management depends on the comprehensiveness of employees’ intellectualization with management functions) |
| 7. The response to environment conditions | Reflective (functioning is relatively poorly amenable to formalism) |
| 8. Dependence of the functioning on random events | Probabilistic (it functions under the action of a large number of random factors, it is necessary to have a relatively clear view of the sources of random impacts) |
| 9. The behavior nature in time | Dynamic (dynamic is due to the possibility of transformation into a qualitatively new state) |
| 10. Discontinuity during time | Continuous (state of controlled management parameters can be estimated at any time point) |

Employees’ intellectual resources management system (EIRMS) of innovative industrial enterprise (Figure 4) has been designed on the basis of infrastructural-reproductive approach.
The structural model of employees’ intellectual resources management of innovative industrial enterprises opens the most substantial connections acting between the subject and the object of management due to the task of achieving the target management results in terms of external, internal and egofactor influences.

In the developed management model the external management parameters are set by command impact $X_{in}(t)$, and it is as strategic aims and tasks of the enterprise in the sphere of employees’ intellectualization, it contains the parameters of economic indicators of employees’ intellectual potential; they are reference to the subject of management reflecting positive management experience both as of the enterprise as of the leading companies in this sphere (region, country, world economy).

Management index value $X_{out}(t)$ determined with actual combination of parameters of quality, quantity, usage of employees’ intellectual resources, is a result of employees’ intellectualization management in the current period describing the management efficiency.

The total management impact $\Sigma X_r(t)$ to the employees’ intellectualization is formed under the influence of the perturbing factor impact $f_i(t)$, also because the observed deviations state of the management object from the reference trajectory. The components of the total managing impact $\Sigma X_r$ to employees’ intellectualization are:

$$\sum X_r = X_{rpl} + X_{rf} + X_{rd} + X_{ru} + X_{rtr},$$  \hspace{1cm} (1)

where $X_{rpl}, X_{rf}, X_{rd}, X_{ru}, X_{rtr}$ are respectively regulating influence on the planning, formation, development, usage, transforming of employees’ intellectual resources.

A comprehensive economic evaluation of employees’ intellectualization management results in a form of regular monitoring allows to set precision in motion within EIRMS along «planning, formation, development, usage, transforming of employees’ intellectual resources» relative to selected reference values to develop and to apply necessary corrective actions of managing nature.

A comparison of the level of achieved indexes of employees’ intellectualization management to the reference level identifies fluctuations from a predetermined management program that can be negative. These findings make it possible to identify problem areas of system functioning of

**Figure 4.** Model of employees’ intellectual resources management system (infrastructural-reproductive approach):

- $X_{out}(t)$ – result of employees’ intellectualization management – output index as a complex assessment of economical parameters of employees’ intellectualization potential;
- $X_{in}(t)$ – tested (input) impact to the management subject (reference management parameters);
- $f_i(t)$ – factor impact of inner and outer enterprise environment causing not planned changes of output index $X_{out}(t)$;
- $\Sigma X_r(t)$ – managing (regulating) impact to the employees’ intellectualization process;
- $\Delta X_{out}(t)$ – deviation $X_{out}(t)$ from reference management parameters.
employees’ intellectual resources management to recommend a complex of corrective actions to eliminate them.

Integral indicator of employees’ intellectual resources management effectiveness is an indicator of actual profitability of employees’ intellectualization ($I_{apei}$):

$$I_{apei} = \frac{P_{us.eir}}{C_{eid}},$$ (2)

where $P_{us.eir}$ is profit from the use of employees’ intellectual resources in the innovation process in the reporting period; $C_{eid}$ are costs for employees’ intellectualization development in the reporting period.

In total, offered by the author model of employees’ intellectual resources management system can have an impact on the management orientation of modern industrial enterprises and the range of acceptable from the innovative development interests point of view variants of organizational decisions in the field of employees’ management, namely:
- to establish a communication between the employees’ intellectual resources management system and the general system of management at the enterprise;
- to take into account the factorial influence of internal and external environment of the enterprise;
- to specify the elements of the in-house employees’ intellectual resources management system;
- to form the criteria of effective employees’ intellectual resources management;
- to identify tools of regulating impact to the process of employees’ intellectualization of enterprise to achieve the targets management indexes.

The initial term of employees’ intellectual resources management with a view to subsequent implementation of this process, is awareness of economic nature of employees’ intellectual resources including their reproductive specificity, terms for the effective implementation of reproductive process, principal standards of management organization. The main types of resources regulating conditions of organization and management implementation of employees’ intellectualization are: employees’ intellectual potential (human resources), investments (material resources); information, objects of intellectual property (intangible resource component).

These conditions cause the strategic goal, objectives, principles of employees’ intellectual resources management, interconnected with common strategic position of innovative industrial enterprises. Next management stages are connected with development or improvement of in-house employees’ intellectual resources management system: management functions forming; selecting of the organizational decisions option; substantiation of regulating impact measures to employees’ intellectualization process; determining of service instructions and regulatory documents; methodical technologies to economic assessment of employees’ intellectual resources and innovative competencies; assessment and analysis of employees’ management effectiveness.

3.4. Discussion

The main theoretical methodological value of the developed management system model is that it allows to submit peculiarities of intersystem interaction of its elements, as well as to determine the place of the system in the general system of the enterprise management.

Employees’ intellectual resources management on the basis of infrastructural-reproductive approach in the proposed management model will avoid many common problems that lead to non-efficient usage of employees’ intellectual resources of innovative industrial enterprises. Namely, as a result of EIRMS embedding into the management system of industrial enterprises it is possible to minimize these negative aspects of not effective usage of employees’ intellectual resources.

1. Irregular and/or unfocused formation and development of employees’ intellectual resources, i.e. not efficient usage of all possible methods that can be used for these purposes.
2. Not justified inflated costs for the formation and development of employees’ intellectual resources of the enterprise innovative sphere without causing investments payback and profit for the enterprise.
3. Complete use of employees’ intellectual resources, their level however, does not meet the
to meet the
thesis about the innovative sphere, and it may be due, for example, to the natural aging
of employees, the lack of skilled employees in modern professional areas, ineffective programs to
attract young professionals, advanced training and retraining of employees, insufficient attracting on
permanent and temporary basis (outstaffing, outsourcing) of leading specialists from other companies,
ignoring of unusual employment forms and so on.

4. Undershoot of employees’ intellectual resources, i.e. certain economic and moral-psychological
losses, both as at the enterprise level and employees’, as at the level of individual employees, as a
result of underestimating their highly professional status and abilities causing moral and economic
disaffection, lack of perspective and motivation to professional development and career growth, the
possible result is dismissal and switch-over of perspective employees into competing company.
Options of the employees’ intellectual resources undershoot of innovation sphere are as follows.

4.1. Existing employees’ intellectual capabilities are used not in full, but the level of actual
employees’ intellectual potential usage corresponds to the production needs, and it means that the
employees’ intellectual potential is higher than what is required to solve the current problems of the
enterprise industrial activity. There are negative effects for employees in terms of likely professional
stagnation. As a consequence there is disaffection and impoverishment of their content, reduced
motivation to high-efficiency of work.

4.2. The level of actual employees’ intellectual resources usage mainly is below the level of
employees’ intellectual abilities, and does not meet the urgent production purposes and objectives.
Possible manifestations of this critical situation may be, for example, the under-utilization of whole-
day and inter shift working time fund both as due to the employees’ fault, as due to organizational and
technical reasons.

In total, ineffective reproduction of employees’ intellectual resources in the innovation sector,
which consists mostly in a mismatch between the employees’ potential, actual results of their work,
and the innovative enterprise needs is mainly due to the following inconsistencies: a) between the
increasing needs of the production in the innovative development and existing professional frame
structure, their qualification; b) if there is no rational arrangement of employees on jobs in innovative
projects; c) absence of necessary motivation or motivational fatigue of employees of intellectual and
innovative activities; d) if there is disaffection.

4. Conclusion.
The main target of employees’ intellectual resources management of modern industrial enterprises
should be achieving and stabilizing the desired reproductive level of employees’ intellectual potential
due to intellectual and resource needs of enterprises in innovative development. This benchmark
defines a sequence of problem solving, tools, allocation of resources in the process of corporate
management aimed at innovative results. Interrelated components allow specifying thoroughness of
innovative-oriented management of employees’ intellectual resources of modern enterprises that form
the employees’ intellectual potential (components of health, education, professionalism, skill,
creativity, art, etc). The most significant results of the study with scientific novelty are as follows.

1. The theory of personnel management is supplemented by elements developing it on the basis of
modern trends in the theory of innovation, innovative enterprises, companies: 1) classification of
different organizational levels of employees’ intellectual resources management at industrial
enterprises; 2) identification of various types of personnel policy corresponding to a certain level of
organization of management of intellectual resources of employees; 3) assessing the impact of
organizational levels of employees’ intellectual resources management to employees’
intellectualization and results of innovation; 4) arguments of critical conditions for effective
management and simulation of employees’ intellectual resources management system at innovative
industrial enterprises.

2. The infrastructure and reproduction approach to the formation of a system of management of the
development of the intellectual development of the personnel of innovative industrial enterprises is
justified and proposed, the essence of which is that the staff development is considered in the form of not an isolated production process, but included in the innovation cycle of the development as its infrastructure. This approach is distinguished by: 1) based on a justified and disclosed author’s reproductive interpretation of staff intellectual development, inextricably linked with the development of innovative competences of employees; 2) Targeted management focus on the resource needs of the innovation process, namely, qualitative intellectual and infrastructure support of all its stages, aimed at increasing the competitiveness of innovative industrial enterprises; 3) taking into account the peculiarities of development management priorities of personnel of innovative enterprises; 4) information flexibility, assuming that managerial impact is formed on the basis of performance and dynamics of factor influence, as well as on signals on deviations from the given reproduction trajectory; 5) universality of application to personnel of different categories of employees of innovative industrial enterprises; 6) predetermination by conditions of technological evolution; 7) the possibility of reducing fragmentation and segmentation in the methodology of the subject area. The approach allowed for (1) formalizing the intellectual experience as the infrastructure of the innovation process; 2) identify the specifics of the subject of control; 3) synthesize the influence of macro-, micro-, and egofactors; 4) Provide an economic assessment of the integrated management result.

3. The structural model of the system of management of development of intellectualization of the personnel of innovative industrial enterprises, represented by system-forming elements in the form of a module of management and a reproductive process of staff intellectual development, has been justified. The model provides the most significant linkages between them, with the task of achieving targeted management results in conditions of external, internal and self-factor influences, and also allows: 1) to divide the place of the system of management of development of intellectual personnel in the general management system of the enterprise; 2) assess the importance of factor influence of the internal and external environment of the enterprise on achieving the target results of management; 3) formalize elements of internal system of management of development of intellectual development of personnel of innovative enterprises and peculiarities of their interaction. The proposed model could influence the management orientation of innovative industrial enterprises and the choice of an acceptable organizational solution to manage the development of staff intellectual development.

Directions to the advanced study may include: further development of theoretical-systematical ideas about the specifics of employees’ intellectualization management as a reproductive process, infrastructure included into the process of innovation, improving of methodologies, organizational procedures and assessment tools of management results.

References

[1] Lucas R. E. 2017 *Lectures on Economic Growth* (Per. Moscow: Gaidar Institute Publishing House), 288
[2] Jensen M. B., Johnson B., Lorenz E., Lundvall B. A. 2007 Forms of knowledge and modes of innovation *Research policy* 36 (5) 680-693
[3] Nelson R. R., Romer P. 1996 Science, economic growth, and public policy *Challenge* 39(2) 9-21
[4] Solow R. M. 1974 The economic of resources and the resources of economics *The american economic review* *American economic association* 64 (2) 257-276
[5] Schumpeter J. A. 2007 *Theory of economic development. Capitalism, Socialism and Democracy* (Per. Moscow: Eksmo) 864
[6] Errow K. J. 2000 Incomplete knowledge and economic analysis *Origin* 4 10-27.
[7] North D. K. 2010 *Understanding the Process of Economic Change* (Per. Moscow: Publishing House GU-HSE) 256
[8] Furubotn E. G., Richter R. (eds.). 2010 *The New Institutional Economics of Markets* (Edward Elgar: Cheltenham, UK) 688
[9] Coase R. 1993 *The Nature of the Firm: Origins, Evolution, and Development* (Oxford University Press, New York, NY) 235
[10] Eggertsson T. 2003 *Economic Behavior and Institutions* (Cambridge University Press) p 401
[11] Metcalfe, J. S. 1998 *Evolutionary economics and creative destruction* (London: Routledge) 153
[12] Mensh G. 2001 *Technological pat: innovations overcome depression* (Per. Moscow: Economics) 211
[13] Santo, B. 2006 Innovation and Global Intellectuals *Innovation* **9 (96)** 32-44
[14] Nelson, Richard R., Sidney G. Winter 1982 *Evolutionary Theory of Economic Change* (The Belknap Press of Harvard University Press, Cambridge, Massachusetts, and London, England) 452
[15] Freeman, C. 1995 The national systems of innovation in historical perspective *Cambridge Journal of Economics* **19** 5-24
[16] Bril A.R., Kalinin A.V., Rasskazova O.A. 2018 Financial and economic aspects of the assessment of innovative projects in the human resource management system In the collection: *Innovation Management and Education Excellence through Vision 2020 Proceedings of the 31st International Business Information Management Association Conference (IBIMA)* 5772-5782.
[17] Evseeva S., Kalchenko O., Evseeva O. 2018 Innovative projects for sustainable development of cities (case of Saint-Petersburg) In the collection: MATEC Web of Conferences, 02007.
[18] Singh K., Jain A., Kaur J., Junnarkar M., Slezackova A. 2016 Cross-cultural differences on Gunas and other well-being dimensions *Asian Journal of Psychiatry* **24** 39-146
[19] Naseer S., Raja U., Syed F., Donia M. B. L., Darr W. 2016 Perils of being close to a bad leader in a bad environment: Exploring the combined effects of despotic leadership, leader member exchange, and perceived organizational politics on behaviors *The Leadership Quarterly* **27(1)** 14-33
[20] Jin S., Seo M.-G., Shapiro D. L. 2016 Do happy leaders lead better? Affective and attitudinal antecedents of transformational leadership *The Leadership Quarterly* **27(1)** 64-84
[21] Fave A. D., Negri L., Manohar P. R., Morandi A., Bassi M. 2015 The Ayurveda concept of Prakṛti and the Western construct of personality: A comparative pilot study *European Journal of Integrative Medicine* **7(4)** 396-408
[22] Ruch W. 1992 Pavlov's types of nervous system, Eysenck's typology and the Hippocrates-Galen temperaments: An empirical examination of the asserted correspondence of three temperament typologies *Personality and Individual Differences* **13(12)** 1259-1271
[23] Senge P. 2009 *The Fifth discipline – art and practice of learning organization* (Per. Moscow: CJSC Olympe-business) 448
[24] Stewart T. A. 2007 *Intellectual equity: new source of richness of the organizations* (Per. Moscow: Generation) 368
[25] Kurakova N. G., V. G. Zinov, V. A. 2014 Kotsubinsky Problems of personnel support of directions highlighted in the forecast of scientific and technological development of Russia up to 2030 *Innovations* **5 (187)** 47-56.
[26] Kibanov A. Y., etc. 2017 Personnel management in Russia: new functions and new in functions: monografia ( M.: INFRA-M) 242
[27] Odegov Yu. G., V. V. Pavlova 2018 New technologies and their impact on the labor market *Standard of living of the population of the regions of Russia* **2 (208)** 60-70.
[28] Spivak V. A. 2018 Trends in the Development of the Modern World and New Problems of Human Governance *Journal of the Faculty of Management of SPbGEU* **3** 197-202.