

The Mechanism of Forming a Human Capital of the Enterprises in the Conditions of Transition to New Technology Way

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Abstract

The happening transformations in a world economic system demand modernization of processes of interaction of economic actors, in particular, the sphere of the industry and education. Participation in educational spaces will allow the enterprises to increase the efficiency of the functioning, due to address forming of their human and intellectual capitals. Affirms as article that when forming strategic alliances the client component of an intellectual capital of participants plays important, if not a paramount role in the establishment of the effective intercompany communications allowing to perform knowledge sharing and information. The client capital purchases special relevance at the organization of educational spaces when educational institutions perform intercompany cooperation with the enterprise for the purposes of address preparation of the personnel under individual requirements of the companies customers.

Keywords: strategic alliances, educational space, intellectual capital.

1. Introduction

The history of world economic development shows that the close relations between different firms existed in this or that form always. In the modern global market economy of the relation of joint activity also become more explicit, and more difficult. Changes of organizational shapes and forms of intercompany interaction are defined by the evolution of a world economic system, development of the competition and management systems.

The human capital, certainly, plays a crucial role in the innovation development, but, to use it as a component of the innovation development not absolutely truly as quite often it happens that the person who received one, two and more educations or otherwise the saved certain stock of human capital, does not use it for the purpose of the innovation development of economy, and, for example, is engaged in a household, raises children, etc. Also, except components of a human capital, such indicators as the volume of the state allocations for science, national research costs and development, costs for technology innovations, national expenses on science, expenditure of the companies on researches and development, etc. are involved in calculations often i.e. the integral index of the innovation development often contains the indicators characterizing the innovation potential and, therefore, cannot objectively characterize the innovation development.

Nevertheless, to make an assessment of the innovation development of regions and the country in general it is necessary on a regular basis as it allows to be defined in a choice of strategy of the innovation development of the enterprise, helps with acceptance of the weighed management decisions concerning the innovation development of regions and the state in general and also sets reference points for improvement of a state policy and allows to develop concrete recommendations for improvement of an economic situation in general.

Thus, the human capital still in some cases "bashfully" is considered a usual costly production factor, but not the sphere of paramount and large-scale investments. Moreover, the judgments in general calling into question existence of this form as such of the capital meet. Meanwhile, the accelerated informatization of economy, steady increase of a role and value of the latest knowledge in economic development objectively predetermine updating new "human

measurement" in social and economic development as the person is the only creator of the latest knowledge and the organizer of their productive application.

The quantity of intellectual resources and degree of their involvement in a social production make a direct impact on rates of economic growth and level of national wealth in the certain countries. It also confirms the possibility of consideration of the progress of an intellectual capital of society through dynamics of intellectual resources, and, respectively, a human capital. Development of economic thought in this direction led to new understanding of national wealth in which structure joins already not only the material richness of society created by work of many generations and natural resources, but also intellectual resources, a human capital.

Accession of Russia to the WTO indicates the need modernizations of processes of interaction of the main spheres of national economy and improvement of organizational structures of her subjects for the purposes of the innovation development and search of new sources of competitiveness.

Strategic alliances in the innovation industries became one of the first organizational forms of the interaction allowing to exercise knowledge management and intellectual resources of the companies. Treatments of their contents a little, part from the existing approaches focus attention to degrees of the interdependence of the organizations - members of Alliance at mutual interest in shared goals. In that case, the strategic alliance can be defined as consolidation of several independent enterprises performing the joint project in production, the scientific researches and development, etc. using thus knowledge, materials and other resources of each other and sharing risks with partners Garrett & Dussauge (2000). Unlike other widespread forms of entrepreneurial integration (for example, joint ventures) strategic alliances have a number of characteristic signs: 1) they have no legal form as such; 2) the motivation of activity of alliance corresponds to strategy of the partner companies and follows from them; 3) in alliance there is a permanent accumulation and exchange of experience and knowledge.

2. Alliances - Methods of Conducting Internationalization of Business

In the conditions of the global competition, alliances become the primary method of the internationalization of business allowing to perform a fast and effective transfer of knowledge and experience of partners. Interaction of participants of strategic alliances can be regulated by relational (obligations) contracts which it develops in the conditions of long-term, cross and mutually beneficial relations between the parties which cornerstone mutual interest in their continuation is. Because of that cooperation becomes continuous, and informal conditions play a more significant role than formal points. If to consider these processes from positions of use and management of intellectual capitals of participants of strategic alliances, it is possible to Note that actually there is an active interaction of all elements of intellectual capitals of partners, in certain cases to extent of mixing (Livingstone J.M., 1989).

The increasing attention to organizational innovations reflects the steady competitive advantages that are a consequence of perfect dynamic capabilities in production companies. The competition based on knowledge proves the importance of the training alliances (learning alliances) as fast and efficient method of development of these capabilities (Andreyeva T.E. & Gutnikov T.Yu.). In case of the long-term relations between firms in strategic alliances of knowledge are acquired better than that at firms the specific absorbing capability to partners develops.

The absorbing capability — it that allows firm to receive and use effectively both external, and internal knowledge which, in turn, influence capability of firm to innovations and adaptation to the changing external environment and its competitiveness (Andreyeva T.E. & Gutnikov T.Yu.).

The factors influencing the absorbing capability of the firm can be in a broad sense divided on internal and external. Internal factors include organizational structure, the sizes of firm, strategy, the previous knowledge and capability of the organization to the reaction. All this can be considered as the firms making the organizational capital. External factors integrate the external knowledge-environment and a position of the firm in networks of knowledge (Andreyeva T.E. & Gutnikov T.Yu.). Thus, it is possible to emphasize once again close interrelation of the client capital of the firm and its organizational capital and need of integrated management with them. The absorbing capability can indirectly characterize a condition of an intellectual capital of the company since such indicator will allow to judge the extent of interaction of all elements of an intellectual capital of the firm.

How successfully the firm can aggregate the different absorbing capabilities of her employees, is defined by its combinatory capabilities. There are three types of combinatory capabilities: 1) system capabilities — the formalized procedures and policy of firm; 2) coordination capabilities — the relations between members of group which is created formally or arises as result of interaction or working rotation; 3) capabilities to socialization — capability of firm to create the ideology integrating employees (Allaberdina L.R., 2014). Thus, the interrelation of a human capital of firm mediated by the organizational capital, with the client capital of the same company, expressed in the provision of the firm in networks

of knowledge once again is confirmed.

For forming of the necessary level of human capital, the industrial companies can create so-called corporate, educational spaces (CES) which can be considered as one of the possible options of strategic alliances of industrial enterprises and educational institutions. Prototypes of such associations existed in the USSR, for example, the cooperation of ZIL, etc.

A modern example is OAO "Russian Aircraft Corporation "MIG", actively interacting with such universities as the Moscow aviation institute, MGTU of N. E. Bauman, MGTU of "Stankin". Universities provide an inflow of personnel of a required profile and qualification, help to develop competencies of the operating personnel, provide carrying out industrial Researches and Development in interests of production.

Thus became OAO "Russian Aircraft Corporation "MIG" the first domestic producer of aviation engineering who integrated the profile organizations providing everything elements of lifecycle of the made flight vehicles within the integrated structure - from development of the concept, outline and design engineering, construction of prototypes and their tests before marketing, serial production and technical support in use, and also training flight and engineering personnel of the customer (Garrett B. & Dussauge P., 2000).

The activity of educational space is adjusted depending on its orientation. In other words, round separately taken like the enterprises the target groups of educational institutions are built. The emergence of groups of employers which will be able to select the personnel for adjacent activities is also possible. Educational spaces can represent very dynamic structures that principal components can be corrected depending on the changed competitive conditions.

In addition, such alliances will allow to provide transition to practice of public and professional regulation of educational process in the organizations of educational institutions through forming of new mechanisms of participation of representatives of employers, professional associations and educational community in carrying out independent examination of level of vocational education.

Cooperation and the organizations in training of specialists can be provided as follows: training of students for professional activity and their equipment by skills, abilities and knowledge happens in educational institution, and the subsequent development of methods and methods of work is performed on workplaces of the enterprise.

Cooperation of industrial enterprises and educational institutions can develop in several directions.

Target training of specialists, since younger training courses: selection and the subsequent financing of training of students at which the organization receives the probationer as the employee on training, to the practician, and in case of compliance of the student to the delivered requirements of the enterprise - for work.

The organization of programs of advanced training or programs of retraining of the acting or future staff of the company.

Joint projects and researches, etc.

As the main objectives of similar strategic alliance it is possible to consider:

- development of interuniversity programs of target training of specialists for industrial enterprises and organizations; joint development of the contents and implementation of educational programs;
- development and approbation of models of integration of scientific and technical, educational and innovation activity with the profile enterprises of the industry; involvement of teachers, graduate students, and students in scientific researches and development;
- the analysis of demand and employment of graduates, development and deployment of effective mechanisms of market forecasting of work in the priority scientific and educational directions;
- creation of the regional interuniversity center of interaction with labor market and ensuring early employment of graduates;
- infrastructure, resource and personnel support of educational process; development of a network of the strategic partnership.

3. Intellectual Capital – The Basis of the Innovation Strategy

Thus the intellectual capital becomes that basis on which the innovation strategy of development of all participants of educational space as strategic objectives of the organizations of educational institutions will correlate with strategic needs of the enterprises for personnel and the innovation development are based.

Using the classification of elements provided by the Skandia Value Scheme model, it is possible to consider this interrelation. The innovation can carry to the organizational capital of the enterprise, but their source are people, i.e. a human capital. The qualitative level of the last, in general, depends on what specialists let out the organizations of

educational institutions of the country. The demand for graduates is defined by the amount of interrelations and intensity of the interaction between educational agencies and enterprises that is reflected in the client capital of the first. Thus, the customer capital decides on the one hand by the organizational capital of the enterprise (external factor), and on another – human and organizational capitals of the organization (internal factor).

Among investment human capital investments in education are considered as one of the most optimum forms of capital investments, i.e. as the implementation of a public intellectual capital in the innovation development of the economy. In the conditions of globalization of economy the innovation in the world market are only accounting entities which perform the innovation activity, systematically master the last scientific and technical achievements, managerial and organizational development allowing to reduce costs of production, to increase labor productivity, to increase high-quality production.

Different conditions influence quantity and quality characteristics of innovation of industrial enterprises (table-1).

Table 1 – The conditions influencing growth of innovation of industrial enterprises

Stage No.	Contents
1.	- ratios (proportion) between the different industries of the economy and their loudspeaker
2.	- interaction with the external environment that is infrastructure about scientific potential
3.	- the structure of the power and public administration
4.	- world scientific community

The system of the organization and management of the innovation sphere is engaged in the balance of these conditions. We offer the following criteria for innovation of industrial enterprises (Table-2).

Table 2 – Criteria of innovation of industrial enterprises

Stage No.	Contents
1.	- acquisition by industrial enterprises of licenses to use of inventions and industrial technologies;
2.	- availability of the sufficient scientific and technical base (STB), scientific and technological infrastructure, material resources and investments necessary for the current and perspective activity of industrial enterprises;
3.	- availability scientific, engineering personnel and financial resources on the increase of its qualification, retraining caused by implementation of technology innovations;
4.	- availability of the institutional system for the purpose of strategic management, including economical forms of business.

There is a question of innovation measurement. Really it is possible to determine innovation size by the following indicators: the amount of financing directed on research works (on payment of scientific personnel, and also acquisition of necessary information and material resources for the purpose of reproduction of material base, structure of the organization and management.

The assessment of the innovation potential allows to estimate adequately a condition and readiness of the social and economic system for the innovation transformations and can be performed by different methods.

We offer the following method: The innovation capacity of the industrial enterprise is characterized by its readiness and capability to use the innovation opportunities. It includes resources, opportunities, means, stocks that can be used by physical persons and legal entities in the course of the innovation development. The structure of the innovation capacity of industrial enterprise can be provided as set of components (component), each of which characterizes a separate measure category and the factors capable to have impact on the innovation process: human capital, scientific researches and development, marketing, finance, infrastructure, information, organizational mechanisms, technology (Table 3).

Table 3 – Structure of the innovation capacity of industrial enterprise

The innovation capacity of industrial enterprise		
resource innovation potential (RIP)	financial innovation potential (FIP)	innovation potential of information (IPI)
the innovation potential of researches and development (IPRD)	institutional innovation capacity (IIC)	technology innovation potential (TIP)
infrastructure innovation potential (IIP)	the innovation potential of marketing(IPM)	innovation potential of a human capital (IPHC)

On the basis of the offered structure the innovation capacity of industrial enterprise can be determined as follows:

$$ICIE = a1RIP + a2FIP + a3IPI + a4IPRD + a5IIC + a6TIP + a7IIP + a8IPM + a9IPHC$$

where FIP – the financial innovation potential, IPI – the innovation potential of information, IPRD – the innovation potential of researches and development, OIP – the institutional innovation capacity, TIP – the technology innovation potential, IIP – the infrastructure innovation potential, IPM – the innovation potential of marketing, IPHC – the innovation potential of a human capital, ai – the weight coefficients of each potential determined by an expert method.

As the main components of the innovation capacity of industrial enterprise which need of assessment has priority value, the author defined a human capital, resources of the innovation development, institutional infrastructure, scientific researches and development (Figure- 1).

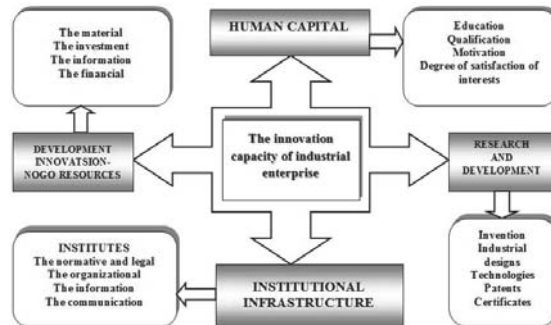


Figure1 – Components of the innovation capacity of industrial enterprise (Allaberdina L.R., 2014)

Thus, the assessment of the innovation capacity of industrial enterprise is the complex indicator reflecting the size, a state and efficiency of use of resources of the innovation development of the company, and also degree of readiness of the enterprise for the innovation transformations in all spheres of a productive and management activity.

4. Efficiency of the Organizational Capital

In the modern forming intellectual organizations "training process is not limited to that workers raise I howl qualification. Using training of employees, and also thanks to group methods of work of the organization become flexible and adaptive, changing as they consider new circumstances of own functioning and development. The main idea of organizational training is the organization of the small groups solving at the same time two problems: 1) to solve a problem or to execute the project and to provide the received material to the management for the subsequent use; 2) to be trained in the course of accomplishment of tasks, to make the gained knowledge property of all participants" (Angela Baron & Michael Armstrong, 2007). From the point of view of the methodology of system and integration approach to research of the modern enterprise, in the informative plan it is possible to mark out the following properties of the intellectual corporation.

First, to an intellectual capital of these enterprises there corresponds the innovation type of the corporate economic mentality characterized by capability of the persons making key decisions to absorb such facts and data which provide continuous "feed" of all corporate community with the latest context information without which expanded reproduction of the most recent knowledge is impossible. Secondly, the intellectual corporation is characterized by availability by pronounced progressive valuable and semantic model of development; that is the system of the operating corporate values, firmly holds the enterprise from spiritless alternatives of business activities. Thirdly, the social innovation capital with a priority of network horizontal forms of interaction at the high level of intra-corporate and intercompany trust is inherent in the considered type of corporations. Fourthly, the most effective condition for functioning of intellectual Corporation is the institutional system founded on a priority of informal restrictions, communications, and the relations; this circumstance allows to protect this type of the enterprises from excessive formalization and, therefore, bureaucratization. Fifthly, the informative characteristic of similar firms is creative freedom of activity, both individuals, and corporate community in general that provides creation and reproduction of "a power resonance" when using creative and labor capabilities of managers and the personnel. Sixthly, the intellectual corporation, owing to the lines and characteristics noted above, cannot but be the self-controlled firm where functions of the organization, planning, motivation, and control all more concentrate in hands of staff of the enterprise. From here it is easy to make a comparative analysis of managerial features usual (even self-training) and intellectual corporation (Table-4).

Table 4 – Comparison of managerial features of management of traditional and intellectual corporation

Traditional (hierarchically) managed firm	The self-controlled intellectual corporation
Availability of the hierarchical power and subordination "from below-up"; implicit obedience to the administration	Availability of authority of team and leader; subordination to common cause; opportunity "to doubt" actions of the administration
Managerial rate on "exact following to instructions."	Managerial rate in continuous search of new decisions
Management of the internal and external competition	Management domestic and external cooperation
Managerial orientation to quality control	Managerial orientation to quality management
Managers make management decisions, and workers carry out them in the conditions of severity and "reactivity"; aspiration to avoid conflict situations	Management decisions are made and carried out by employees in the conditions of intellectual ability and high dynamism; conflict resolution
Use of profit as bases of labor motivation; individual encouragement "Confidants.»	Self-realization use as bases of creative motivation; encouragement of persons and groups on the basis of real achievements
The concept "search guilty" at economic failures and the arising problems	The concept of "search of decisions" at economic failures and new problems
Management at the fixed roles, forms, and methods of responsibility	Management at permanent changes of roles and subjects and forms of their responsibility
Corporate networks form and estimated "from above."	Corporate networks form and estimated "from below."
Management on the basis of "fear" of the future at the hidden expectations "failures and problems."	Management on the basis of "passion" of meetings with future problems at readiness for risk and uncertainty

The analysis of specifics of management of traditional and intellectual corporation allows to note that intellectual entrepreneurship, being a spiritual and moral form of entrepreneurship as such, demands independent subject research. Thus in the context of the considered problem, the problem of new economic spirituality "is delivered by the crisis of the spirit in the world which takes the forms of denial of spirit and a dukhoborism. ... New spirituality understands spirit not as detachment and flight from the world, obediently leaving the world such what it is and as a spiritual gain of the world, as its real change, not objectifying spirit in a world reality, and subordinating the world internal existence" (Berdyayev N.A., 2003). The intellectual entrepreneurship is completely corresponded to the statement of the great Russian philosopher-social scientist. Only we will add that "in the majority of the companies final check of the value of new knowledge has economic character and includes such parameters as efficiency growth, cost reduction, investment profitability increase. However, in the company creating knowledge also other factors that reflect a qualitative aspect of knowledge are not less important. Whether the idea realizes the vision of the enterprise? Whether it serves as an expression of aspirations of the top management and strategic objectives? Whether there is at it a potential for creation in the business of the community impacting organizational knowledge" (Knowledge management, 2006)?

Forming of an intellectual corporation means implementation noted in the stated above table of the corresponding managerial aspects. However, highly effective generation of the latest intellectual ideas and knowledge requires such organizational structure that is adequate to the called imperatives of management.

The efficiency of the organizational capital of the enterprise is defined by human capital that improvement can happen through forming of orders to educational institutions that leads to increasing in the client capital of educational institutions. Having defined strategy of development of the enterprise, it is necessary to formulate requirements for the client capital of the organizations of educational institutions, on the basis of the predicted characteristic of the organizational capital of the enterprise.

Thus, the circumstances stated above show need of this sort of strategic alliances for an increase of efficiency of use of intellectual capitals of the enterprises and maintenance of the competitiveness of subjects of the market.

Development of the absorbing capability of the enterprise by means of development of its core elements — the individual absorbing employees abilities, and actually human capital — is the major task within the trained alliances (Bazadze N.G. & Kasyanov M.K., 2012 & Gaponenko A.L. & Orlova T.M., 2008). Here, in addition to direct providing firms with knowledge, the organizations of educational institutions participating in alliances (David M. Walke, 2002) can make the greatest contribution.

5. Conclusion

As it is possible to see, when forming strategic alliances the client component of an intellectual capital of participants plays important, if not a paramount role in establishment of the effective intercompany communications allowing to perform knowledge sharing and information. The client capital purchases special relevance at the organization of

educational spaces when schools perform intercompany cooperation with the enterprise for the purposes of address preparation of the personnel under individual requirements of the companies customers.

Such satisfaction of strategic needs for personnel of the enterprises will allow to create the essential client capital of subjects of educational spaces that eventually has to allow to perform interaction more productively thanks to an individualization of accounting of requirements and opportunities of subjects.

However, increase in efficiency of use of intellectual capitals of participants of strategic alliances requires the application of particular control techniques that in Russia are used very poorly because of insufficient development of the practice of managerial innovations.

References

- Garrett, B. & Dussauge P. (2000). *Strategic Alliances*.
- Livingstone, J.M. (1989). *The Internationalization of Business*. Macmillan Publishers Limited.
- Andreyeva, T.E. & Gutnikov, T.Yu. (under the editorship of), 2010. *Knowledge management: Anthology*. 2nd prod. The lane with English SPb.: Publishing house "Higher school of management". pp. 514.
- Allaberdina, L.R. (2014). Assessment of the innovation capacity of industrial enterprise: essence, methods, perspectives of an application / *Innovation and investment*. No. 3. pp. 5-9.
- Angela Baron & Michael Armstrong (2007). *Human Capital Management: Achieving Added Value Through People*. MPG Books Ltd.
- Berdyayev, N.A. (2003). Spirit and reality. M.: OOO "Izdatelstvo AST"; Kharkov: "Folio". pp. 350-351.
- Knowledge management (2006). Translation from English M.: Alpina Business of Axle boxes. pp. 46-47.
- Bazadze, N.G. & Kasyanov, M.K. (2012). About experience and perspectives of development of social partnership of corporation of defense industry with national research universities. *Management and business administration*. #1. pp. 169-173.
- Gaponenko, A.L. & Orlova, T.M. (2008). *Knowledge management. How to turn knowledge into the capital*. – M.: Eksmo, pp. 377.
- David, M. Walke (2002). *A Model of Strategic Human Capital Management*. GAO.