

G. Aimukhanbetova

*International Business School, Switzerland
(E-mail: guldana_a5@mail.ru)*

Intellectual capital management for increasing innovative activity of enterprises

In the article the management of the intellectual capital of the enterprise in order to increase its innovative activity is discussed. The development of intellectual capital in conjunction with innovative activity is a key factor in the development of any enterprise in an innovative economy. The ability of an enterprise to create and use intellectual capital in its work largely determines its strategic position in domestic and foreign markets. The article defines that the innovative activity of an enterprise depends on internal and external factors. The author highlights the innovative and creative potential of employees as the main internal factor of innovative activity. The article shows that the implementation of intellectual potential in intellectual capital requires the presence of three resource components: personal, informational and innovative potentials. The transformation of intellectual potential into intellectual capital occurs in the process of vigorous activity on the use of corresponding resources and market opportunities, as a result of which intellectual capital is formed, consisting of innovative, human and structural capitals. The article shows that intellectual capital is increasingly concentrating on working with the consumer and is being used more and more effectively to provide the necessary intensity of organizational growth and development. The author examined in detail the modern model of business processes of companies, which is based on the concept of the capital structure of the company «inverted pyramid», the levels of which represent respectively: intellectual, circulating and physical capital.

Keywords: intellectual capital, innovative activity, intellectual potential, open innovations.

In modern society an intellectual capital becomes the basis of wealth. It determines the competitiveness of economic systems and it is a key resource for their development. All subjects of market relations like commercial enterprises, state and public institutions and organizations participate in the process of creating, transforming and using intellectual capital. The ability of an economy to create and effectively use intellectual capital increasingly determines the economic strength of a nation, its welfare.

In the modern world, a firm or organization is a manufacturer more knowledge than goods. This means that workers are engaged in the production of knowledge, organizations become learners, and innovations become a source of newly created value. Intellectual capital, to a greater extent than physical assets or financial capital becomes a sustainable competitive advantage.

Intellectual capital in increasing of innovative activity

Innovative development as a constant search for the best use of resources of an economic entity in order to timely meet the potential needs of clients is the main competitive factor for success in modern post-industrial economy.

To bring in the action of the innovation mechanism and the implementation of effective innovation, the economic entity must have innovative activity. Otherwise, all innovative developments and upgrade opportunities will not be used on the final consumption market, and large financial investments in research and development will not pay off the corresponding profit.

Today, the level of innovative activity in Kazakhstan industry is not higher than 10 %, while, the EU has 50 % active enterprises. The concept of «innovative activity» describes the degree of development of the innovative activity of an economic entity. All activities, including innovation, should be characterized by a certain efficiency and effectiveness, since they require resource costs and lead to some result. The activity of the company shows the relationship between the planned content of the activity and its results. It is the differences in innovative activity which explain different innovative results with the same baseline conditions (goals, plans, resources, potential).

O.N. Melnikov understands innovative activity as a creative activity (creative energy) manufacturers of goods or services expressed in achieving the dictated increments novelty of technical-technological, economic, organizational, managerial, social, psychological and other indicators processes, products or services produced by specialists in competitive time [1].

Researcher A.A. Trifilova argues that innovation activity means the intensity of the implementation by economic factors of the development and involvement of new technologies or improving products

in economic turnover. Given the various aspects of the concept of «innovative activity» the following definition can be given: innovative activity (IA) of a firm is the ability of an economic subject to intensive innovation activity based on the mobilization of its innovative capacity to achieve competitive advantages due to the comprehensive use of external and internal factors of development [2].

This activity is determined by the rational strategy and tactics of innovative activity of the company at all stages of the life cycle innovation. Therefore, in strategic terms IA is characterized by the following private indicators:

- horizon and depth of forecasting changes in the market situation;
- quality of the innovative strategy of the organization;
- level of resource mobilization or use of innovative potential;
- size of attracted investments;
- quality of technology used in conducting innovative changes;
- validity of the implemented level of innovation activity.

Tactically, IA is defined by two private indicators:

- compliance of the company's reaction with the nature of the competitive strategic situation;
- speed (pace) of actions and implementation of strategic innovation changes.

For a more complete characterization of innovative activity we define its main features, which are presented in Table 1.

Table 1

A set of features that characterize the content of innovative activity

№	Feature	Specification
1	Horizon and depth for prediction of changes in the market situation	The relevance and effectiveness of the applied methods, technologies and strategic analysis tools for the enterprise proadaptation
2	Quality of innovation strategy	Compliance of the innovation strategy with the potential of the economic system and harmony with other strategies of the company
3	Level of use of innovation potential	Mobilizing the innovative potential of both overt and covert
4	Investment in innovation	The desire and ability to attract the necessary investments under optimal conditions
5	Innovative performance of management practices	Application of methods aimed at gaining real competitive advantages in innovative activity
6	The adequacy of the overall level of innovative activity	Correspondence of the level of innovative activity to the state and development trends of the internal and external environment
7	Proadaptivity of innovative behavior to change	The degree of compliance of the innovative activity with the objective existing and expected external conditions (including the market development of the innovation) and the subjective internal (reactive, active or planned-predictive behavior of the economic environment)
8	The pace of implementation of innovative changes	The ingenuity of actions for the implementation of strategic innovation changes, characterized by a set of indicators, including indicators of renewal of products, technology and technological equipment, personnel knowledge, organizational structures, etc.

Note. Composed by author based on [3].

The signs with their characteristics noted in the table determine the degree of manifestation and validity of the intensity level of this activity, which, in turn, affects the efficiency of using the innovative potential of the enterprise. In essence, innovative activity transforms potential into real competitive power. In this case, the innovation activity acts as a certain factor that strengthens / lowers the initial (planned) innovation potential.

In turn, innovative activity depends on a number of factors, both internal and external. The factors stimulating the innovative activity of an enterprise are associated with the emergence of new needs and preferences among consumers, a reduction in the life cycle of goods, and an increase in

the research intensity of products. The main internal factor, in our opinion, is the innovative and creative potential of enterprise employees. This is confirmed by modern research, which suggests that «the success of innovations at 85–90 % depends on the level of training of personnel, with a special role for management personnel». Innovatively tuned management of enterprises must anticipate the wishes of consumers; determine the contours of future market. In this way, they must create products and services that have no competitors for some time. Therefore, it's not just a skilled training and a wealth of professional experience of employees, today factors for increasing the innovative activity of enterprises and, as a result, their competitiveness are important, but the level of creative energy (creative activity) displayed by each of the specialists, their motivation for internal entrepreneurship.

A factor capable of activating the innovation activity of enterprises is international competition in the domestic market. In conditions of openness of the domestic market, the economy of a particular country becomes an open system, which significantly changes the nature of competition in all market segments.

It should be noted that an innovative enterprise in Kazakhstan differs significantly from a western one, since Western enterprise has been working in a highly competitive market for a long time, saturated with high-quality products. Kazakhstan, however, lags well behind the quality standards of the international market. A significant part of the new product is new only in the domestic market and is not competitive, and its bringing to world standards requires such expenses and efforts that many enterprises cannot afford. In this regard, the question of the implementation of so-called open innovation, that is involvement of third-party and transfer to the external environment of their own developments.

Open innovations are aimed at creating new business opportunities through the joint exchange and use of complementary knowledge of different partners. Thus, at the core of open innovation a mutually beneficial exchange of knowledge lies, for the successful development of which the organization must be trained. A company that uses the principles of a learning organization becomes an attractive place to work for highly skilled artists, improves relationships with customers and partners. A special role in this belongs to education and science.

A higher quality of the workforce, characterized by a higher level of education, the skills of workers, leads to a more efficient use of production resources. It is the educational level that reflects the creative ability of employees to perceive new ideas that have appeared in the market. The quality of the workforce determines the ability of a firm to carry out its own R&D or copy new products from other firms. When characterizing activities that are creative and innovative, there is a need to use the concept of intellectual potential.

Thus, the intellectual potential of society is its ability to generate and introduce something new in the historical process and thereby create the prerequisites for moving forward. The intellectual potential of the collective, the individual and the enterprise represents the potential to develop and continuously adapt to market changes, including by creating them themselves. The transition of developed countries from industrial to post-industrial, information society, economy of which is based on knowledge (intellectual economy) highlights the intellectual component of human activity.

Intellectual potential serves as a basis for the development of intellectual capital through the actualization of potentially creative information. Intellectual capital is a new, more complex form of capital, with great potential for socio-economic activity, a kind of indicator of the development of any organization of the national economy. Intellectual capital is the intangible assets of a company, which are created by the perception and assimilation of information with the subsequent adoption of creative management decisions that provide the organization with competitive advantages in the market. The results of the use of intellectual capital are intellectual products in the form of scientific research, technological solutions, know-how, inventions, patents, licenses, etc.

Intellectual capital has the following structure: intellectual potential, intellectual activity, intellectual property, information, infrastructural and market assets. To realize the intellectual potential in the corresponding capital, it is necessary to have three resource components: personal, informational, and innovative potentials (Fig. 1). As Figure 1 shows, the transformation of intellectual potential into intellectual capital occurs in the process of vigorous activity on the use of appropriate resources and market opportunities, as a result of which intellectual capital is formed, consisting of innovative, human and structural capital [4].

If the first and third elements of capital are different licenses, patents, know-how, information technology and research results, then human capital expressed in the form of the necessary competences for converting information into actual new knowledge, is a necessary and connecting link in the system of intellectual capital management.

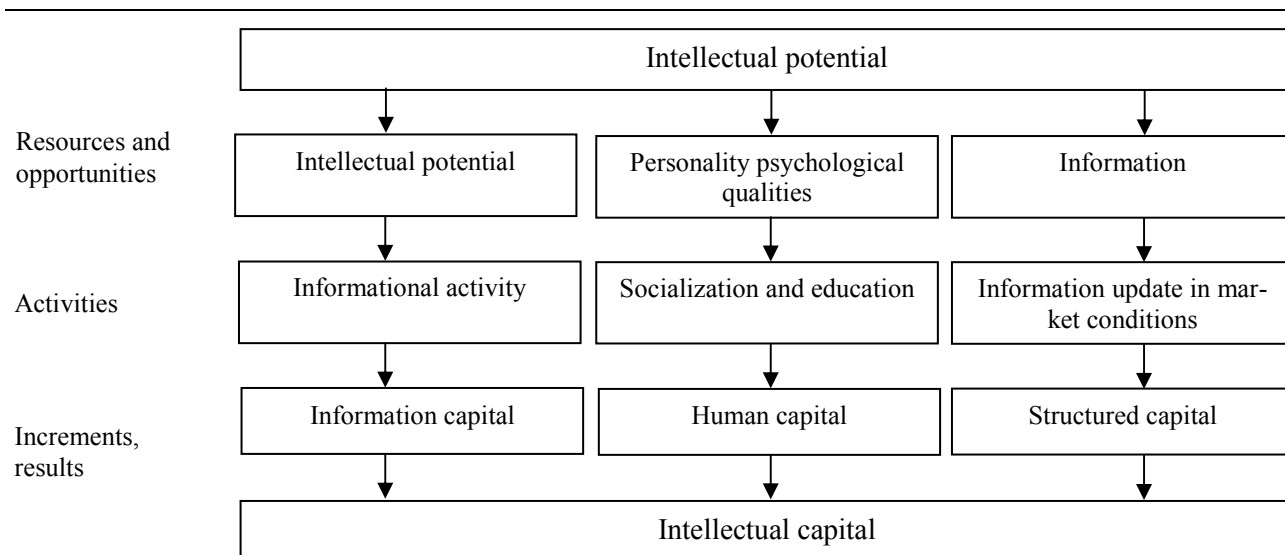


Figure 1. Transformation of intellectual potential into intellectual capital

The company's intellectual capital is an integral part of the process of creating surplus value. In this regard, the intellectual capital of the company needs effective management, like any other group of assets. The main purpose of intellectual management capital is the intellectual support of the company's business process, continuous development and increase in the value of intellectual assets.

Institutional capital structure of modern companies

Intellectual capital is increasingly concentrating on working with the consumer and is being used more and more efficiently to ensure the necessary intensity of organizational growth and development. This allows us to speak about a serious essential reconstruction of the structure of organizational capital, in connection with which the standard methods and technologies of financial accounting, accumulating the traditional financial performance of the company, no longer reflect the adequate situation of the business situation. The modern model of business processes of the majority of prosperous companies is intuitively or consciously based on the concept of the company's inverted pyramid capital structure, the levels of which are respectively: intellectual, circulating and physical capital (Fig. 2).

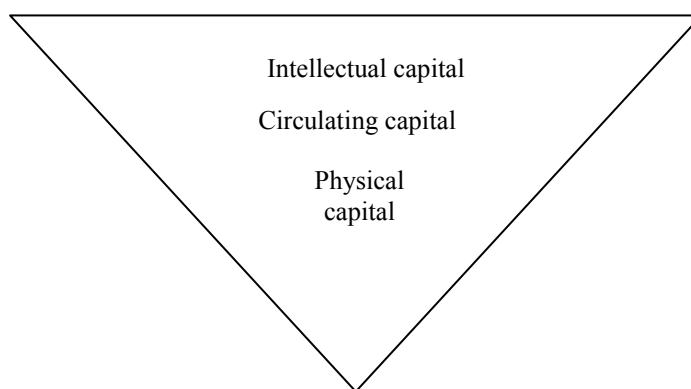


Figure 2. Institutional capital structure of modern companies [5]

For the first time, the «inverted pyramid» model was proposed by american experts (G. Mine, D. Schneider), who analyzed the capital structure of electronic and traditional business companies and identified the ratio of physical, negotiable, human and brand capital. Despite the fact that, according to the author, such a capital structure of a company does not quite accurately show the real elements of the aggregate capital of modern companies, the fact of stating serious changes that fundamentally transformed the institutional structure of organizational capital [6].

The amount and value of each type of capital in the total organizational capital may vary, depending on the industry sector of the company. If, for example, we try to analyze the capital structure of a PR agency and a financial organization (or, say, an information company and a large industrial enterprise), then we obviously get different ratios. Today, all companies have a clear tendency to increase the aggregate of intangible assets, acting in the form of the company's intellectual capital. The ratio of elements in the structure of intellectual capital itself largely depends on the degree of technology of organizational processes and procedures [7].

The company's intellectual capital is beginning to be more and more actively applied when introducing new marketing technologies, in particular, to retain consumers and extract much more revenue through non-standard approaches and solutions. In the new model of the company's capital structure, processes that do not create added value are not taken into account, consumer access is facilitated and the supplier-consumer chain as a whole is being improved. Companies can use this advantage by offering consumers new, better-quality service methods and providing prompt feedback, revealing a high sensitivity to changes in their needs and requirements, i.e. actively using all elements of their intellectual capital.

Intellectual capital management is becoming a key management problem for the most large and small companies. E. Brooking [8] identifies such activities in the management of intellectual capital as:

- identification of intellectual capital;
- development of organizational policies for the development of intellectual capital;
- audit of intellectual capital;
- documenting of intellectual capital;
- protection of intellectual capital;
- distribution of intellectual capital;
- augmentation and renewal of intellectual capital.

At the level of a particular company, the management of intellectual capital is based on finding ways to effectively use knowledge and information to achieve goals: increase profits, save on costs, increase sales of a product (goods and services), etc. company activities.

Conclusion

Thus, the intellectual capital of a company is an integral part of the process of creating surplus value. In this regard, the intellectual capital of the company needs effective management, like any other group of assets. The main goal of intellectual capital management is the intellectual support of the company's business process, continuous development and increase in the value of intellectual assets.

Successes in the development of intellectual capital in domestic enterprises are connected with the solution of the problem of effective management: the creation and multiplication of the intellectual potential of organizations through their transformation into learners; the use of intellectual capital in the creation of innovative products by increasing innovative activity; the process of investing the whole cycle of intellectual capital transformations.

The division of intellectual capital into its constituent parts is of fundamental importance in terms of assessing the effectiveness of its use. It should be emphasized that when formulating the definition of intellectual capital and highlighting its structural elements, clarity is of great importance not only from the theoretical and analytical, but also from a practical point of view, allowing to identify the object and subject of the impact reliably, to build the optimal relationship between them.

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Г. Аймуханбетова

Кәсіпорындардың инновациялық белсенділігін арттыру үшін зияткерлік капиталды басқару

Мақалада инновациялық белсенділікті арттыру мақсатында кәсіпорынның зияткерлік капиталын басқару қарастырылған. Инновациялық қызметпен бірге зияткерлік капиталды дамыту инновациялық экономикадағы кез келген кәсіпорынды дамытудың басты факторы болып табылады. Кәсіпорынның өз жұмысында зияткерлік капиталды құру мен пайдалану мүмкіндігі көбінесе оның отандық және шетелдік нарықтардағы стратегиялық ұстанымдарын зерттейді. Мақалада кәсіпорынның инновациялық белсенділігі ішкі және сыртқы факторларға байланысты екені анықталды. Автор инновациялық қызметтің басты ішкі факторы ретінде қызметкерлердің инновациялық және шығармашылық әлеуетін бөледі. Мақалада зияткерлік капиталға зияткерлік әлеуетті іске асыру үшін үш ресурстық компоненттің болуы қажет: жеке, ақпараттық және инновациялық әлеует. Зияткерлік әлеуетті зияткерлік капиталға айналдыру нарықтың тиісті ресурстары мен мүмкіндіктерін пайдалану бойынша белсенді қызмет үдерісінде жүргізіледі, нәтижесінде инновациялық, адами және құрылымдық капиталдан тұратын зияткерлік капитал қалыптасады. Мақалада зияткерлік капитал тұтынушымен жұмыс істеуге көбірек шоғырланатыны және ұйымдық өсу мен дамудың қажетті қарқындылығын қамтамасыз ету үшін неғұрлым тиімді пайдаланылатыны көрсетілген. Автор «төңкерілген пирамида» компаниясының капитал құрылымының тұжырымдамасында құрылатын компаниялардың бизнес-үдерістерінің қазіргі заманғы моделін егжей-тегжейлі қарастырған, оның деңгейлері зияткерлік, айналым және физикалық капиталдарынан тұрады.

Кілт сөздер: интеллектуалды капитал, инновациялық қызмет, зияткерлік әлеует, ашық инновациялар.

Г. Аймуханбетова

Управление интеллектуальным капиталом для увеличения инновационной активности предприятий

В статье рассмотрено управление интеллектуальным капиталом предприятия с целью повышения его инновационной активности. Развитие интеллектуального капитала в совокупности с инновационной деятельностью является ключевым фактором развития любого предприятия в инновационной экономике. Возможность предприятия создавать и использовать в своей работе интеллектуальный капитал во многом определяют его стратегические позиции на отечественных и зарубежных рынках. В статье определено, что инновационная активность предприятия зависит от внутренних и внешних факторов. Автор выделяет инновационный и творческий потенциал сотрудников как главный внутренний фактор инновационной деятельности. В статье показано, что для реализации интеллектуального потенциала в интеллектуальный капитал необходимо наличие трех ресурсных компонентов: личностного, информационного и инновационного потенциала. Преобразование интеллектуального потенциала в интеллектуальный капитал происходит в процессе активной деятельности по использованию соответствующих ресурсов и возможностей рынка, в результате чего образуется интеллектуальный капитал, состоящий из инновационного, человеческого и структурного капитала. В статье показано, что интеллектуальный капитал все больше концентрируется на работе с потребителем и все более эффективно используется для обеспечения необходимой интенсивности организационного роста и развития. Автором детально рассмотрена современная модель бизнес-процессов компаний, которая строится на концепции структуры капитала компании «перевернутая пирамида», уровни которой представляют соответственно: интеллектуальный, оборотный и физический капитал.

Ключевые слова: интеллектуальный капитал, инновационная деятельность, интеллектуальный потенциал, открытые инновации.

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