# THE APPROACH TO THE MODEL OF AN INTERNATIONAL SCIENTIFIC AND EDUCATIONAL CENTER VALUATION

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One of the most important tendencies in the world social and economic development is the tendency of promoting of integration processes in education sphere at regional and subregional levels. An example of regional integration is the European integration of 29 countries within the frame of the Bologna declaration (1999). As an example of educational integration at subregional level it is necessary to mention tripartite cooperation. In the Declaration of heads of the states and the governments of Japan, the People's Republic of China and the Republic of Korea (signed in 2003) it is noticed that three countries will continue support which means wider students exchange, mutual recognition of training, credits and degrees as well as teaching of languages. Projects of institutional level which essence consists in creation of unified scientific and educational complexes (SECs), connected with requirements of national production take the important place in educational integration processes. Scientific and educational complexes in a broad sense of this concept exist at all levels of national economy – micro-, meso-, and macro levels. Moreover, SECs are being formed at the world level [1]. .

At a micro level SECs are presented by integration of scientific and educational institutions (possibly having one of them as a basis), and a nature of such the integration could be international. Organizational structures of integrated scientific-educational complexes of different countries have various specifics (for example, under the legal organizational form: corporate universities, associations, consortiums). All of them have objectively interacted structural and functional elements [1]: the complex mission, accumulated and structured arrays of information (knowledge), human potential, organizational structure, dynamic elements, assets infrastructure etc. Economic expediency for integration consists in creation of structures and assets of collective usage, such as the centers of technological trans-

fer and innovations, centers with unique equipment and software, electronic libraries for common use.

During the last years in Russia the regulatory activity directed on maintenance of legal status, creation and regulations of activity of the integrated scientific and educational structures was intensified. As a matter of fact, the state recognized creation of education and scientific complexes as one of the basic forms of inter-industrial integration of science and education [2]. Even earlier educational institutions have acquired the right to conduct entrepreneurial activity regulated by the corresponding legislation. There were serious impetuses for development of income generating activities in an education sphere regardless of inflows from the budget sources[1]. Thus entrepreneurial activity of high school or high school association is similar to industrial activity of enterprises for producing goods or services, and the generalized consequence of this process is the economic result.

For purposes of realization of integration of science and education in the Vladivostok State University of Economics and Service the creation of the International Scientific and Educational Consulting Centre (ISECC) in the field of electronics and an information technology is proposed. The ISECC as the network broker will co-ordinate a resource exchange without realization of educational and scientific activity and also to realize its own scientific, educational, consulting and innovation projects [2]. The self-financing principle in the operational period owing to realization of off-budget educational and non-educational activity will be a basic principle of financing of the ISECC. Thus the activity content extends essentially and assumes simultaneous realization of entrepreneurial and non-entrepreneurial activities. The description of cash flows of such entrepreneurial activity will have the similar logic of the description as for cash flows of a commercial entity which includes such consecutive stages as: manufacture and realization of services, goods, works, reception and distribution of income from realization, compensation of production costs, payment of taxes and reinvestment in operational activity.

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[1] Hereby using tax benefits and exemptions is connected with some conditions and limitations.

It seems that at the first stages of the Center activity the getting of net income and payment of taxes to this income is not considered as basic results of activity. Both of the Center, and the organizations-founders, by definition are non-commercial organizations which were not created for maintenance of receipt of additional tax payments in budgets. Therefore the maximization of taxes as a result of activity of the Center is not the final goal, but in the long term such result could be considered as possible.

The strategy of the development of the ISECC is built and formalized on the basis of the Balanced Scorecard (BSC). Thus it is aimed on the maximum satisfaction of needs of a wide range of stakeholders, particularly: educational institutions and the scientific organizations (national regional and foreign), regional businesses, professional communities, students and post-graduate students (including foreign), schoolchildren, state structures and authorities. The stakeholder approach of the ISECC strategy is based on the idea that needs of all groups of interested parties should be considered in the strategy with respect to the importance of the particular stakeholder for the organization at different stages of its development [2]. Therefore it seems to be methodologically and practically expedient to carry out estimation of total stakeholders' value of the creation of the ISECC.

For this purpose it is necessary to choose the most relevant model for value estimation and to transform it according to specifics and essential features of the Center. Whereas the Center functioning assumes the direction of all positive free cash flows on the further development and since PP&E assets and long-term obligations are not assumed, authors offer to apply the model of estimation of operational value. It will be the first component of the general estimation model. As the second model component it is suggested to adopt an estimation of *added stakeholders' value* of the ISECC.

The model basis (estimation of value of operations of a business unit, $V_{op}$) is the key in the concept of *Value Based Management* (VBM) of the company to the benefit of its shareholders. The given concept is well covered in cited literature and is wide spread recently, including in Russia. As it is known, for the calculation of

the $V_{op}$ value it is necessary to forecast *Free Cash Flow* on the local time horizon and its growth rate on the further prospect, then to calculate the present value (*PV*) of the projected *FCF* and the *Terminal Value* (*TV*) on infinite horizon at average cost of capital of the company. The description of calculation and/or estimation of parameters of the given model for the ISECC is given below:

- The Free Cash Flow, $FCF_t$: from the net operational income calculated on revenues and costs cash flows of business processes taking into account specifics of the taxation, the amount of net investments in operating capital is subtracted. Though the system of book keeping of noncommercial organizations does not assume formation of the standard balance reporting, it is quite possible to calculate the net fixed and working operating capital at the end of the accounting period.

- Projected horizon of the FCF, *t*: can be taken from 3 to 5 years.

- Growth rate of the FCF after the projected horizon, g: is defined by some expert assumption methods.

- Discounting rate, *k*: for simplification the official Central Bank of Russia rate can be accepted instead of WACC since the Center's principal owner from the point of view of social and economic effects is the budgetary system[2].

The formula for value of operations (the basic model) will look as follows:

$$Vop = \sum_{t=1}^{3\div 5} \frac{FCF_t}{(1+k)^t} + \frac{FCF_t * (1+g)}{(k-g) * (1+k)^t} \quad [1].$$

Further, it is offered to expand the base model of estimation at the expense of such component which will be some kind of an indicator of the market added value calculated for public companies. It is the amount of *Stakeholder Value Added (SVA)*. Necessity of introduction of this component is dictated by the fact that prices of goods and services of the ISECC are not obliged marketable to the full extent, and, more likely, are substantially socially focused. The sequence of estimation of

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[2] However, the questions connected with the property on assets, created during entrepreneurial activity of the scientific and educational centre, and, hence, an estimation of required return of not state owners of the capital, lie outside of the frames of consideration of the given article.

stakeholder value can be following: at first there are identified and described in terms of cash values ($V_{S1}$, $V_{S2}$, ..., $V_{SN}$) and weight values ($w_1$, $w_2$, ..., $w_N$) added social and economic effects for stakeholders; then integrated weighted-average mid-annual value of significant effects on look-ahead horizon of planning $T$, $V_s$ is defined; further the mid-annual rate of increase of this value, $g_1$ is estimated by expert method. Finally all data is entered into the model of discounting with a constant growth[3]:

$$SVA = V_S * (1 + g_1)/(k - g_1), \quad [2]$$

$$V_S = \frac{\sum_{i=1}^{T} V_{SN} * w_N}{T}. \quad [3]$$

The model restriction consists in certain convention or subjectivity of the account of the added social and economic regional effects. The technique of value estimation of such effects demands a special study. The integrated list of added stakeholder effects can include the following:

- Development of human and intellectual potential of the region at the expense of improvement of quality in school and professional education;

- Increase of efficiency of use of budgetary funds with the purpose of development of personnel potential of the region;

- Satisfaction of personnel requirements of specific territories in the region;

- Reduction of outflow of young experts from a region including of rationalization of labor orientations of youth.

- Saving on the local budget expenses caused by the improvement of training quality in the field of an information technology and electronics;

- Saving on the local educational budget expenses caused by the optimization of a network of establishments of additional vocational training and decrease in unproductive costs;

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[3] Known as Gordon's model and used for estimation of shares value on dividend flow.

- Possibilities to concentrate released finances of the educational budget for special socially-significant directions;

- Growth of budgetary incomes in a region as consequence of labor productivity increase in enterprises and growth of their competitiveness.

- Increase of income base of the small and medium-sized enterprises;

- Improvement of qualitative parameters of international scientific-educational cooperation;

- Growth of net income from educational services exports as a result of expansion of international communications between universities in dedicated areas and attraction of more foreign students to universities – the Center's partners;

- Growth of scope of innovative activity and acceleration of commercialization of top priority innovations in science and technologies;

- Increase of investment appeal of the specialized educational system because of mutually agreed distributions of costs between resources users.

So, the final model of estimation of the value of the International Scientific and Educational Center will look as follows:

$$V_{ISECC} = Vop + SVA = \sum_{t=1}^{3 \div 5} \frac{FCF_t}{(1+k)^t} + \frac{FCF_t * (1+g)}{(k-g) * (1+k)^t} + \frac{Vs * (1+g_1)}{(k-g_1)} . \quad [4]$$

In the authors judgment, the given model raises controllability of system, allowing to the internal stakeholders (managers, experts, and instructors) to understand sources of competitive advantages and additional consumer value of the Center, and to the external stakeholders (clients, regulators, potential suppliers and investors) to estimate *the quality of valuable offer* of the Center.

The urgency of the offered model of estimation of the ISECC' value raises in connection with prospective expansion of a set of internal and external stakeholders at the expense of participation of institutional partners among universities and scientific community of Republic of Korea, China, Vietnam, partners from the countries of the Central Asia. It will be important also that educational servic-

es of the ISECC will satisfy needs of such group of external stakeholders as foreign students trained in the Primorie Territory.

The used sources:

1. N.Rozanova, E.Savitskaya. Universities in XXI Century: Challenge of Research // *VOPROSY ECONOMIKI*. – 2006. – №7. – Pages 118 - 128.

2. The International Scientific and Educational Consulting Center in the Field of Computer Science and Electronics: Conceptual Model, the Mechanism of Management and Development Strategy: / General editorship of G.I.Lazarev. – St. Petersburg: Publishing House of the Polytechnic University, 2008. – Pages 29, 35.