

Intellectual Organization in the New Model of the Russian Marine Industry Development

N.A. Kostrikova & A.Ya. Yafasov

Baltic Fishing Fleet State Academy of the Kaliningrad State Technical University, Kaliningrad, Russia

ABSTRACT: The role of intellectual organizations in the formation of professional competence, social adaptability and volitional qualities of workers of marine industry is actual in terms of growth of natural and man-made emergency situations, unstable socio-economic environment. In the marine industry, except for the education system and research, such organizations have prospects of development as the most competitive in the shipbuilding, fishing industry, port management, the logistics of fishing in the ocean and coastal fisheries, transport and storage prior to further processing. In this article is proposed a holistic resource approach to the formation of intellectual organization as a major maritime educational complex that integrates all stages of maritime specialist training, from a seaman to a master of a large ship including active research and intense maritime practice.

1 INTRODUCTION

With the entry of the world economy to the turbulent phase [1,2], the specific role have acquired questions of improved sustainability and the competitiveness of the Russian economy, ensuring economic and food security, the country's attractiveness for investment, for residence and intellectual creation. New realities require the organization of the modern system of general and continuing education that is in a dynamic research and innovation environment, integrated into the world educational space, but kept the best traditions of education and experience of domestic education.

According to Academician Engelhardt, "The life is a unity of three processes: substance, energy and information." Any new information is the product of intellectual work of human activity, reflects the ideology or environmental phenomena. Labor, human activity associated with energy supply and

nutrition. Thus the fundamental problems of humanity could be divided into energy, food, world outlook and associated with the habitat. Development of Russia in the paradigm of solving these problems could be provided with a way:

- consecutive transition to the production of the science intensive production, with minimization of impact on environment and expenses of natural resources, development of technological innovative entrepreneurship;
- maximum mobilization of the intellectual capital and people spiritual potential, ensure continuity of generations, increases of scientific potential and culture;
- the organization of investment funds, tools and mechanisms of development of infrastructure and innovative manufacturing to ensure the growth of domestic investments within the next 10-15 years not less than 20% to previous year;
- creation of choice possibility of the foreign investments, answering to problems of formation

of information - industrial society with kernels in the form of the intellectual organizations and intellectual clusters;

- the creation of rapidly developed infrastructure - communications, telecommunications, GIS, transportation, roads, banks, hotels in the framework of the public-private partnership;
- the organization of modern system of repatriation of compatriots and the thought-out migratory policy in compliance with the principles of humanity and economic reasonability;
- the organization of a continuous system of training and retraining of personnel, providing constantly updated intellectual resources for the problems solution of post-industrial economy.

Even against crisis the leading countries are engaged in building-up of investments in technological updating and by that they accurately designate where there will pass the main line of competitive fight in the future world competition and that it gives them in the form of perspective.

2 INTELLECTUAL CLUSTERS

Considering the problems of education, recreation and continuous updating of intellectual resources and their role in national economy, it is necessary to pay attention to one very important point: the direction and nature of evolution of any society is defined not only by the amount of the gross domestic product (GDP) volume, but also how this gross domestic product is reached. If it is a way of intellectualization of work, it develops society and promotes growth of its competitiveness. If it is a way of traditional primitive extensive technologies, the motivation to development weakens, and the state loses its positions in the international markets, its economy degrades. The limiting case in the presence of rich natural resources is the «Dutch disease» of the economy.

Today we live in a century of the world economic, political and cultural integration and unification, a consequence of which world labor division, labor migration and productive resources, standardization and unification of the legislation, economic and engineering processes, the convergence of different nation's cultures. These processes cause an intense competition for intellectual resources in the world market for a simple reason – the maximum surplus value in any production belongs to the intellectual component which share in the world economy in comparison with material and productive resources increases every year.

In the next decades of the modern alternative globalization could be the formation of the 10-15 regional economy - "free trade areas" which will be protected from negative influence of global economy by means of protectionism, gold, "raw" or other standard as basis for the establishment of foreign exchange rates.

The successful solution of problems in economy of knowledge of the future is connected with development of the intellectual organizations, "intellectual clusters" [3] which activity is based on

the holistic views and resource approach, and social resources as show events of the last years in Iraq, Libya and Syria, have not smaller value in comparison with natural, productive and intellectual resources. It is necessary to pay attention to the new phenomenon of the social environment in a number of developed countries of Europe - growing social fragmentation and decrease in connection with this phenomenon of stability development. Therefore economy intellectualization is represented objective regularity and which is based on the formation of the intellectual organizations, the intellectual clusters as which quantum in production could be considered the small innovative enterprises (SIE).

The cluster means a network of the concentrated geographically sign independent production and/or service firms, suppliers and consumers, the innovative organizations – the research institutes (RI), the design offices (DO), universities, the scientific and technical complexes (STC), SIMs and other market institutes (brokers, consulting, engineering and other firms) interacting with each other within a uniform field and redistribution of a surplus value.

The main features of the intellectual cluster are:

- the organized intellectual ability to expect future changes, forks, their reasons and consequences;
- integrating new knowledge with the existing in cluster organizational, institutional, individual and collective intellectual capital, ability to create new knowledge and competences;
- ability to adhere to the development purposes, effectively using and reproducing various resources, first of all - intellectual.

The realization of the general principles of clustering policy of the intellectual organizations assumes:

- combination of the general and specific stimulant means of clustering processes according to fractal model of intellectual clusters, using the principle "from below to up" and "from top to down";
- ensuring the fundamental principles of a complementarity and compliance: local, municipal, regional and national clusters - making part of the international clusters;
- communication processes of the intellectual clustering with scientific, technological and educational infrastructures at the active state-private partnership (SPP) with the leading role of the state in this process;
- basing policy of the intellectual clustering on country history, its culture, traditions and partner activity experience.

It is necessary to emphasize fractality of the intellectual clusters and their non-contradiction to the fundamental principles of the complementarity and compliance therefore providing the continuity and indissolubility of economy development of the certain countries and regions with harmonious entry into the future design of the world economy.

Today the level of the innovative enterprises in Russia is less than 15%, and production share in the international market – less than 0,5%. It is not the best situation in this plan and in the Kaliningrad region. Nevertheless, there are the real preconditions for transition from production of low repartition to

development of the full-scale difficult productions based on new technologies for which highly qualified specialists on highly paid workplaces will be demanded. It would be allow to reduce one of the main shortcomings of social and economic development, both the region, and the country as a whole – to begin the system and steady growth of still thin layer of organized and socially active middle class on the basis of development of technological innovative entrepreneurship.

3 THE MARITIME ENTREPRENEURIAL UNIVERSITIES ARE THE CRYSTALLIZATION KERNELS OF THE MARITIME INTELLECTUAL CLUSTERS

The World Ocean plays an important role in the world economy [4]. The competent professional organization of safe maritime economy today is a recognized need of countries and companies' activities in the oceans. Its significance was shown by the global impact of the accident at the oil platform of British Petroleum in 2010. Causes of the accident (the general damage from which only for residents of the USA is estimated at 40 billion dollars), according to a specially created Presidential Commission for the United States and BP itself, was the lack of engineering qualification of the personnel, which led to the continuous violations of work safety and to the inability of the staff to identify early signs of imminent failure.

A series of the mistakes revealed by the commission showed the systematic failures in a risk management and called into the question culture of the safety measures in branch as a whole [5].

Hence it appears that strengthening of the engineering, scientific, educational, organizational and innovative components in a large scale growing of maritime business in modern conditions has great importance. Respectively the training of professionals with advanced engineering knowledge in marine economic activities, skills of work in extreme conditions of the Arctic and Antarctica, intellectuals, able to generate and apply entrepreneurial new knowledge to ocean management and sustainable development is considered to be extremely actual. Such activity demands heavy capital investments and within the classical universities is rather problematic. The new organizational and legal forms of the organization of education, science and generation of the innovations are necessary. These forms can be successfully realized in a format of the maritime entrepreneurial universities [6].

Speaking about a new role of the universities in the knowledge economy, many researchers write: "the main rate becomes not for processing of raw materials, and on the creation and distribution of the knowledge" [7]. Such treatment is not absolutely exact as the innovations are the materialized knowledge demanded by the market therefore it is not impossible to treat the knowledge economy as the economy directed simply on creation of new knowledge. The following key stage of the knowledge economy – a materialization of knowledge at new technological level according to inquiries of the market is necessary.

And it is connected with new labor – highly skilled, capable to be trained and self-trained in which intelligence, – ability to generate new knowledge, is integrally combined with production ability and skills "to work hands". Today all developed countries have deficiency of such manpower. With increase of level and quality of life the aspiration to difficult knowledge and the difficult intellectual work, demanding certain efforts at youth decreases. Therefore the education and science reforms pass today practically in all countries.

Keys to the problem's solution, according to the authors and despite of the globalization processes are not only in the economic plane, and in the moral, cultural and spiritual planes. Therefore there are demanded the maritime entrepreneurial universities where along with professional knowledge, enterprise skills being trained the moral and strong-willed qualities which are so necessary for the work in the difficult conditions of the ocean take root.

The specifics of the training of the maritime specialists assumes versatile development of the professional knowledge and the skills, the special psychological training for the extreme situations, the ability to make decisions in the conditions of uncertainty and risk and excellent physical health. The quality standards of the training of the maritime specialists constantly raise.

The Baltic Fishing Fleet State academy, fulfilling all requirements of the International Convention of Training Certification and Watchkeeping for Seafarers and other international normative documents, developed and introduced the quality management system covering all vertically integrated training system. In particular, the experts, having practical experience of navigation - captains of ships, navigators, radio engineers, mechanics obligatory participate in the educational process. Therefore the KGTU-BFFSA university complex reminds entrepreneurial universities of the USA at which to the teaching known businessmen with the original special courses are invited, and case methods of the training become one of the most important instruments of the formation of the professional knowledge and entrepreneurial skills being trained.

The continuous transformation of the fishery education in the direction of the creation and the integration of the scientific and educational complexes in the system of the higher education institutions of the Federal Fishery Agency showed the relevance and the expediency of the creation of the maritime entrepreneurial universities.

In 2009 four higher education institutions - the Murmansk state technical university, the Astrakhan state technical university, Petropavlovsk-Kamchatsky state technical university and the Kaliningrad state technical university underwent the procedure of the state accreditation by results of which and taking into account the development of the fishery scientists [8,9] the decision on the creation on their basis, and also on the basis of the Far East fishery technical university of vertically integrated educational complexes was made.

In particular, in the Kaliningrad region it was formed vertically and horizontally integrated

maritime entrepreneurial complex including the educational institutions with a belt of the small innovative enterprises both other scientific and innovative and enterprise infrastructure which showed the real opportunity and expediency of the organization of the first maritime entrepreneurial university in the West of Russia – in the Kaliningrad region (see fig. 1-3). 75% of the structural departments and the external cooperative relations are realized already today by the KGTU-BFFSA university complex in practice. The need of such restructuring of the maritime education is explained by the following.

The term "national entrepreneurial university" does not exist in the new Education Act 273FZ, although it is more suited to the industry 's largest public universities in the country. Therefore, it is reasonable to appeal to the Parliament of the country with a legislative initiative to supplement the new category of educational institutions of higher education - "national entrepreneurial university" to the Education Act. Such a name and legal form most accurately reflect the major educational organizations that are able to solve complex scientific, educational and innovative problems, taking into account their specific features. They would be fully in line with the Strategy of development of maritime activities of the Russian Federation up to 2030 [10], and put a new content to article 103 of the Education Act 273FZ which determines creation of business companies and partnerships by higher educational institutions, the activity of which is the practical implementation of the results of intellectual activity.

The maritime entrepreneurial university is represented today a new stage in development of the maritime education, which in economy inseparably from the science and the innovations, from the development of the maritime business. It allows to provide and realize system approach to the solution of the maritime activity problems.

4 THE INNOVATIVE LOGISTICS IN BALTIC FISHING FLEET STATE ACADEMY

In the paradigm of the human capital development and creation of the intellectual organizations, in the Baltic Fishing Fleet State Academy since 2007, is being developed and continuously improved the new structure and logistics of innovative educational, research and developmental activity [9], which can become the model of the intellectual organization with a kernel in the form of the maritime entrepreneurial university.

As of June, 2014 it presented in the Figures 1 and 2.

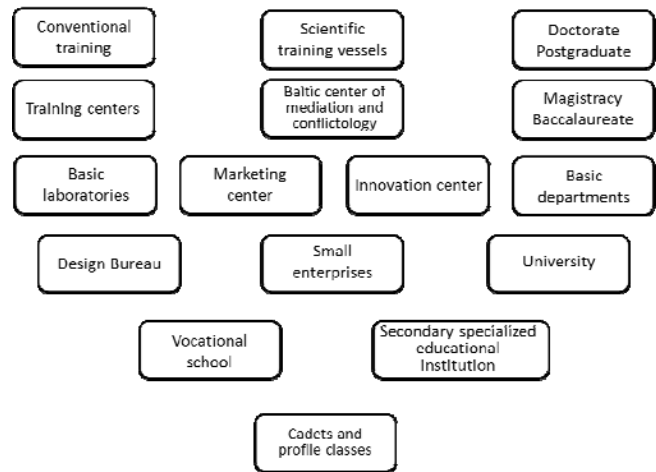


Figure 1. The structure of maritime entrepreneurial university

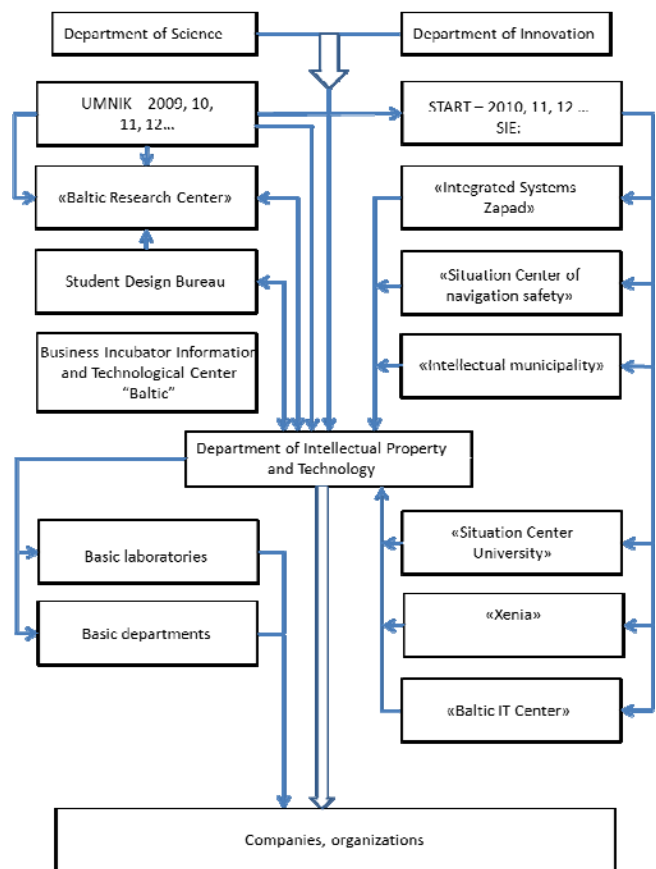


Figure 2. Logistics of maritime entrepreneurial university

Innovative activity, the search works connected with the formation of the scientific and technological reserve are connected, as a rule, with the high risks and have low appeal to the private business.

Therefore the state role in the formation of the innovative environment is the leader, and the maritime entrepreneurial universities have to become a key element of the state policy in the modernization of the maritime industry.

They are capable to provide basic and applied researches of the World Ocean, to feed the maritime industry with the new technologies and the technical solutions, providing with the qualified professional shots and distribution of the research and development results, developing the intellectual

organizations in this important branch of Russian economy.

Considered structure and logistics vertically and horizontally integrated university complex – a prototype of the maritime entrepreneurial university with specialization in fish branch considers:

- 1 Specificity of the fishing industry - a basic component of food security and the maritime industry in general, have specific requirements for the personnel training, the most important elements of which are in addition to training is high moral and volitional qualities, knowledge of modern information and GIS technology and the ability to use them, high general knowledge, good knowledge of foreign languages, a mandatory practice in the courts, the ability to make quick decisions in extreme cases;
- 2 The need for development in the universities sector research and innovation environment, technology and simulator framework, reflecting the current level of world shipbuilding, shipping and fishing industry, to allow the preparation of specialists, meeting the requirements of the world's leading maritime power of the XXI century, which is positioned in the Concept of Russia long-term development for the period up to 2020 year;
- 3 The processes of development of the educational system of maritime industry and the accelerated modernization of the technological base of the shipbuilding industry, new technology shipbuilding, construction of a new fishing fleet and the development of modern logistics of production, delivery, processing and delivery to the world and the Russian domestic market fish and other marine products, which must take place simultaneously, generating a synergistic effect of the industry;
- 4 Necessity of further development in the sector of large multi-level vertically and horizontally integrated maritime university complexes combining fisheries and Secondary specialized educational colleges, research institutes and design bureaus, small businesses at universities, basic departments and laboratories at the largest enterprises of the coastal regions, small educational-scientific-industrial complex (SESIC).

Supporting infrastructure for innovation activities, on the one hand, is a component of the management of scientific and innovation in general, a platform of technological entrepreneurship, on the other - an intermediary between suppliers of new products - structural units and employees of the university, engage in research and innovation, and consumers - organizations and enterprises are willing to pay for intellectual products. Quality management system, in addition, is the infrastructure to support innovation activities of the Academy provides structural units responsible service innovation (preparation of documents, provision of services in mediative of R & D, legal support contracts, technology consulting, etc.).

One of the primary goals of the infrastructure of scientific and innovative activity is the formation of Academy nurturing talented young researchers and teachers - the innovators and the release of Academy departments engaged in research activities, from

performing non-core functions, the grouping of functions in a specific subdivisions. This kind of technology business incubators, greenhouses for young or novice innovators, whose role is performed, for example, the Baltic Research Center, Student Design Bureau.

5 CONCLUSION

Such an approach to the intellectual organizations in the new model of the Russian maritime industry development consistently increases scientific and innovative potential of the Academy, through which cadets and academy students, young scientists and teachers have the opportunity to participate actively in the programs of various level generally with the state sources of financing.

The state sources of financing of innovative projects in Russia are subdivided into the budgetary and off-budget funds, the state competitions and orders. The most interesting to students in our opinion is the program of the Foundation for Assistance to Small Innovative Enterprises in Science and technology program, which is called "Member of Youth Scientific Innovation Contest" - "M.Y.S.I.C. [11].

This program is a launching pad for young researchers. Since 2007 in intellectual competitions was attended with their ideas more than 1000, of which more. 50 young candidates prepared by structural units of the Academy, came in the final of the annual competition, and 14 were 2-year grant in the amount of 400 thousand rubles. - Funding for the implementation of applied R & D projects.

As a result, the university complex KSTU-BFFSA currently has a "belt" by young innovators SIE's where the project on creation of innovative products for the marine industry and coastal areas. In particular, in 2012, to the innovative structure of BFFSA including 5 SIE, were added 2 more, which are being developed in the field of manufacturing and information and communication technologies: "Baltic IT Center" and "Xenia". These enterprises received grants Foundation for Assistance to Small Innovative Enterprises in Science and technology program "wise men to start" to 1 million rubles for the implementation of R & D and launch of new products this year

The SIE "Intelligent municipality" was successfully developed a unique product of the same name, many titles of protected intellectual property, proceeded to the final stage of the project for implementation of hardware and software "Intel-M" in the seaside of Gurievsk municipality of Kaliningrad. The total amount made in the last years of research Academy SIE exceeded 20 million rubles. Thus, the intellectual organization of the cells forming the new economy, creating the basis for new methods of social control and manufacturing systems using creative technologies, and they are developing not only in manufacturing, but also state and municipal government.

The maritime entrepreneurial universities correspond to all main features of an intellectual cluster formulated in section 2 of this work.

The organization of the maritime entrepreneurial universities in a paradigm of the intellectual organizations will allow to modernize regional systems of the integrated professional education in seaside regions, to build new strategy of the innovative transformations in the economy and the social environment, to give a powerful impulse to a sustainable development of the peripheral territories of Russia.

BIBLIOGRAPHY

- [1] Ershov M. World Economy: prospects and obstacles for restoration. Moscow, Economy Questions, №12, 2012, p. 61-83.
- [2] Global Trends 2030: Alternative Worlds. A publication of the National Intelligence Council. December 2012.
- [3] Krasnyanskiy I.Yu., Merkulov A.A., Yafasov A.Ya. Model of the intellectual system of the monitoring and management of the municipality: «Intelligent municipality». The collection of articles «Modernization: innovative solutions in economy and management». / Northwest academy of public service; under edition of prof. A.Ya. Yafasov. - St. Petersburg, 2010. p. 11-40.
- [4] Volkogon V.A., Kostrikova N.A., Yafasov A.Ya. Maritime entrepreneurial universities for the new Russian economy. «Administrative consultation», Northwest institute of management of RANE and PS at the President of the Russian Federation, St. Petersburg, 2013, № 4, p. 87-94.
- [5] Deep Water The Gulf Oil Disaster and the Future of Offshore Drilling. Report to the President. National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. USA, Washington, January 2011, 398 p.
- [6] Volkogon V.A., Kostrikova N.A. From the fishing fleet academy to the maritime entrepreneurial university. St. Petersburg, Economics and Management, №2 (88), 2013, p. 52-58.
- [7] Research universities of the USA: mechanism of integration of science and education. Under edition of prof. V.B. Supyan, Moscow, Magistr, 2009, 399 p.
- [8] Volkogon V.A. New approaches in training for the fishing industry in Russia. St. Petersburg, Economics and Management № 1/4 (40), 2009, p. 90-96.
- [9] Volkogon V.A. Formation of the branch system of the fishery complex training. St. Petersburg, Economics and Management № 9 (47), 2009, p. 49-57.
- [10] <http://www.rg.ru/2010/12/21/mordeyatelnost-site-dok.html>
- [11] www.fasie.ru (the program “Member of Youth Scientific Innovation Contest”)