

MISSION, GOALS AND STRATEGY OF THE INNOVATION OFFICE OF ODESSA I.I.MECHNIKOV NATIONAL UNIVERSITY

Innovation office is a structural subdivision of the Odessa I.I.Mechnikov National University (here and after ONU) responsible for technology transfer, innovative activity and intellectual property management. The Innovation office is created with the purpose of the effective use of intellectual potential of ONU, introduction of modern management tools in the field of intellectual property and assistance in the development of the civilized commercialization system for the objects of intellectual property right.

The Innovation office follows Constitution and laws of Ukraine, President's orders and the Decrees of Verkhovna Rada of Ukraine, the Decrees of the Cabinet of Ministers of Ukraine, the orders of the Ministry of Education and Science of Ukraine and its Department on innovations and technology transfer, the orders of the National Academy of Sciences, and also to its statute.

1. Mission of the Innovation office of ONU

1.1. The mission of the Innovation office of ONU is *to serve as a regional hub for integrating innovative activity of academic and research institutions, governmental agencies and business companies in the Southern Ukraine by providing world class service on research, development and commercialization of innovation products on local, national and international markets.*

2. Goals of the Innovation office of ONU

2.1. To support the national policy of Ukraine in the field of innovative activity, knowledge and technology transfer under the framework of the National Strategy for economic and social development for 2004-2015 "Following the Way of European Integration" by scientific and education activities

2.2. To contribute to forming a nation-wide network of researchers and inventors by integrating local actors into national and international knowledge dissemination activities, to shorten the innovation development lifecycle by facilitating ONU researchers and business cooperation, to participate in developing the regulation for better functioning of national innovative product markets.

2.3. To support innovations, knowledge and technology transfer, to motivate the innovative activity of ONU scientists and researchers by expansion the possibilities for application and practical use of their inventions, new knowledge and technologies, intellectual property rights, patents, results of scientific, technical and research activity.

2.4. To conduct the regular dialog between ONU researchers and scientists, from the one side, and businessmen, entrepreneurs and other subjects of the Ukrainian innovative system, from the other side.

2.5. To organize the public popularization of the results and new achievements of scientific, technical and research activity of ONU in the field of innovations, knowledge and technology transfer.

3. Tasks and functions of the Innovation office of ONU

3.1. The tasks of Innovation office of ONU correspond to its mission of serving as a regional hub for innovation activities linking local actors to international innovation knowledge networks.

3.1.1. To provide the services of technology transfer, innovative activity and intellectual property management within ONU partnership network of university research staff and local business clusters, that corresponds to the acting legislation and international agreements on these issues.

3.1.2. To introduce the up-to-date management system for the ONU intangible assets, patents and intellectual property. The system includes legal support, database management, financial estimation, project management support, consultations and information support, negotiation arrangements.

3.1.3. To increase the rate of successful implementations of the results of scientific, technical and research activity of ONU by better preparation and adaption of innovations for commercialization use

3.1.4. To provide necessary expertise in assessing innovation activities for their commercial and social perspectives on local, national and international levels within all stages of innovation development lifecycle search.

3.1.5. To provide appropriate management of intellectual property rights for knowledge, know-how and innovations, developed within ONU and its partners.

3.2. To reach the above mentioned purposes the Innovation office fulfills the following functions:

3.2.1. Analytical function:

Finds out the market needs in the objects of intellectual property rights of ONU, searches the potential partners, who are interested in knowledge and technology transfer from ONU, as well as the customers for the results of scientific, technical and research activity of ONU, takes part in the search of potential investors for financing the operations of the transformation the objects of intellectual property right (intangible asset) to the of pilot product (tangible asset).

Creates, manages and updates the database of ONU results of scientific, technical and research activity, intangible assets, patents and other intellectual property of ONU, determine and supervise confidential issues.

Together with ONU “Scientific and Research Section” conducts the analysis of the planned researches and makes forecasts of their results from the point of view of their possible interest for the potential customers and partners and in order to define their perspectives of

commercialization, as well as evaluate their legal security in Ukraine and in the foreign countries.

3.2.2. Commercial and consultative function:

Support commercialization of the objects of intellectual property rights of ONU, in Ukraine and abroad, including: advertising of scientific and innovative potential of the results of ONU scientific, technical and research activity; putting contacts with enterprises; analysis of commercial suggestions from potential licensees and investors; conclusion of agreements for intellectual property management; development of the drafts of the statute documents for spin-offs and other units, created by ONU for realization the objects of intellectual property rights.

Consults ONU insiders (staff, students and postgraduate students) and gives the, practical support and help in the realization by them their property rights on the objects of intellectual property rights and in the receipt by them the privileges, rewards and fees, commissions, foreseen by the legal acts of Ukraine and ONU, including copyrights, inventors' rights, etc. for the use of the objects of their intellectual property, created by them during the implementation of labor contract duties and obligations.

Takes the part in development, preparation, negotiation and control after implementation the contracts and agreements in the field of intellectual property between ONU staff and knowledge and technology transfer customers.

3.2.3. Collaborative and integrative function:

Organizes workshops, seminars, trainings and other studying events to enhance the qualification of ONU insiders (staff, students and postgraduate students) in the field of intellectual property management, in particular civilized commercialization.

Prepares suggestions to classify the certain results of scientific, technical, research and other information to be confidential.

Develop the recommendations in relation to the possibility of the results of ONU scientific, technical and research activity public publishing, use, dissemination, exhibition, transfer, putting to the databases and other forms of information with the free access.

Develops the suggestion regarding participation in international cooperation in the sphere of intellectual property within the framework of the international programs, projects and professional associations, takes part in execution of these programs and projects.

4. Organization of activity of the Innovation Office of ONU

4.1. The Innovation office is created, reorganized and liquidated by the order of ONU Rector.

4.2. The Innovation office is functioning in the unique complex of scientific, technical and research activity of ONU and is submitted to the Rector.

4.3. The Innovation office cooperates with the administrative, scientific, educational and other ONU units, in particular with the educational subdivisions and the "Scientific and Research Section" of ONU, which consists of: Scientific organizational department, Scientific centers, Scientific educational centers, Scientific research laboratories, Scientific research sectors, Scientific research groups and the chairs, Sector of scientific international collaboration). In the framework of this cooperation the Innovation Office has a right:

4.3.1. To get the information (documents, helps, calculations, written and verbal explanations) from the administrative, scientific, educational and other ONU subdivisions, in particular from the educational units and the "Scientific and Research Section" of ONU, necessary to implement the tasks of the Innovation office.

4.3.2. To take part in ONU Rectorate meetings, coordination conferences, and also in the meetings on the questions of technology transfer, innovative activity and intellectual property management.

4.3.3. To represent the interests of separate research ONU units on the questions of technology transfer, innovative activity and intellectual property management.

4.3.4. To attract ONU staff for implementation the tasks of the Innovation office in the framework of its authority.

4.3.5. To develop the suggestions on the civilized commercialization and most effective ways of transfer the results of scientific, technical and research activity, objects of intellectual property rights, knowledge, etc. of ONU.

4.4. Within the limits of the authorized powers the Innovation office cooperates with Ukrainian and foreign innovative infrastructure, banks, funds, enterprises, establishments, organizations, trade unions and associations, whose activity is related to the intellectual property and which are interested in the technology and knowledge transfer from ONU.

5. SWOT-analysis of ONU innovation potential

5.1. Strengths of ONU go deep into its history. These days the University celebrates its 145th anniversary and the deep-rooted traditions mark its present-day potential. Being by far the largest classical University of the Southern Ukraine it involves many new talented young men from all over Ukraine and the foreign countries into the inspiring universe of science. The University is a frontrunner in many fields, ranging from nuclear physics to liberal arts. It plays the integrating part in conducting researches in major fundamental sciences throughout Ukraine. But the increasing trend is to set the tight relations with business, non-governmental organizations and authorities to bring new knowledge in everyday life. The University's extensive network of international links helps develop local competencies in providing innovative techniques both in education and research.

So the strengths of ONU in the field of research of innovation and research need to be counted:

- a) Scientific potential – the University holds major competencies in providing high-quality research and developing innovations of multidisciplinary nature.
- b) Experienced faculty – more than 6000 professors, research fellows and teachers have high qualification in many fields. Most of them have passed trainings on innovative techniques in education.
- c) Regional leading position in education and research – the University can become a regional hub of integrating all the innovative activity in the Southern Ukraine
- d) Established relations with many national and international institutions – the University has unique possibilities to spread its competencies and exchange knowledge within leading Ukrainian and foreign universities
- e) Tight cooperation with businesses, authorities and non-profit organizations – for the last years the University put a lot of efforts to build long-lasting relations within business, government and non-government organizations. The University enjoys good reputation among professionals and use it to promote intraregional cooperation
- f) Full integration in Bologna process – international recognition of diplomas creates new opportunities for the University, putting aside a noticeable effect of providing more efficient education and research

5.2. The weaknesses of ONU in research and innovation prospective are due to ongoing transformation of the Ukrainian educational system and its status as a full-fledged classical university. After the collapse of the Soviet Union, the higher education in Ukraine is constantly

under severe budget constraints. From one side dogmatic concepts no more limit the development of science. From the other side, technological and material basis for research and development has witnessed strong deteriorations during last twenty years. The government did not have any comprehensive strategy for education and science development in Ukraine, so valuable resources were spread around many institutions, which often meant inefficient use of them. The strong bias towards education activity brought research and development to the backstage. ONU is a classical university, which means its priority in fundamental rather than applicant sciences. The University is keen to support the long-lasting tradition of being the important center of fundamental natural and social science development. So the innovation regarded not as strategy, but as a process.

The major weaknesses of ONU are:

- a) Bias towards education – research activity is constantly under financing
- b) Priority to fundamental science – strong problem-orientation is needed to make innovations a successful venture
- c) Complicated management due to huge size – new techniques are not always implemented soon, as the University has a complex administrative hierarchy, which lacks flexibility
- d) Reluctant activity of many scientific and educational associations – intensive networks of inter-university cooperation is still under development, many associations have vague targets, which lowers their efficiency
- e) Still developing cooperation with professional associations and business companies – business traditionally orients toward industry-specialized educational institutions rather than a classical university

5.3. The opportunities of ONU in promoting innovation culture come from the turning point of the overall development of the overall Ukrainian educational system. The transformation process went along curved paths, but now the need for consolidation of scientific activity is evident. The strong institutions with trained faculty, modern facilities and well-established relations will take the lead in developing and providing innovations on the regional and national level. Ukrainian business has grown already and despite severe economic crisis, it realizes the need for innovations to boost its competitiveness. The joining of the WTO creates new competitive marketplace and bring new challenges for all actors. Ukraine become more open to the world and that mean new possibilities for educational institutions. Innovations go global, so do the university does too. ONU was one of the first institutions in Ukraine to imply Bologna process. And it was very successful in this venture, as new teaching techniques were applied, curricula and syllabus were modernized, management was improved. The science and education become more flexible, more responsive to the needs of students, business and the country.

The main opportunities are:

- a) Regional leadership and national-wide cooperation in boosting innovations – the University can initiate many innovative activities in the region and throughout the country
- b) Integration in pan-European and international scientific network – the University has a good experience of international cooperation and can be the major link in trans-border cooperation
- c) Rising demand for innovations from local businesses and other institutions – as markets mature more company switch their eye to sustainable advantages, like innovations
- d) Strong political will to support innovative institutions in Ukraine – the idea of developing technological parks and research clusters gain more political support

- e) Development of professional associations and non-profit organizations and, as a result, building up cooperation networks in innovation

5.4. The threats are common for all Higher Education institutions in Ukraine. Economic turmoil shortens possibilities for investments both in public and private activity. Less government support is extremely painful for classical universities, which bear the most of social obligations. Research and innovation are regarded as high-risk investment, so even small state and private universities share more resources to education activity rather than research. So networking is not common in Ukraine. There is no long tradition of cooperation between science and business. But without active participation of both parties and mutual trust the innovations are impossible. Ukraine is only to establish the framework of business support for education and research. Mind leak is also the important threat, as innovations require well-skilled and motivated staff. Mix of professors' experience and drive of young researches bring great results. Low pay in higher education diverts fresh minds out of professional career in university or pushes them out of country to Western and now Eastern Europe or the USA.

The threats to consider are:

- a) Impact of economic crisis – diminishing investment opportunities have a negative impact on innovations in every field.
- b) Weak network of inter-institutional cooperation – no progress in developing cooperative networks may be achieved because of financial reasons, weak intellectual property regulation and competition among institutions
- c) Weak support from business and non-profit organizations – education and research risks to stay as overwhelmingly state financed and controlled activity
- d) Lack of young researches and threat of mind leak – a generation gap is becoming more and more apparent in Ukrainian institutions.
- e) No comprehensive strategy for development of science and education, including innovation, in Ukraine on the governmental level – despite the mention political will discussions about the way the high education should be transformed still far from conclusions.

6. Strategy of the Innovation Office of ONU

Strategy of the Innovation Office of ONU grounds on the national policy in the field of innovative activity, knowledge and technology transfer, as well that is formulated in the framework of the State Strategy for economic and social development for 2004 – 2015 “Following the Way of European Integration”, regional policy on developing innovative industries, boosting entrepreneurship and integration of the local economy into global economic system, ONU policy as a regional leader in science, education and social progress. The promotion of innovation activity comes along with the European initiative as it was put in the Communication from the European Commission to the European Parliament, The Council, The European Economic and Social Committee of the regions ¹: “Europe's entrepreneurs currently face multiple obstacles and adverse framework conditions in getting ideas to market. At European level, this chain of obstacles needs to be systematically removed and a single market for innovation created”. Thus the strategy contributes to implementation of Ukrainian intention of joining the EU.

The strategy of the Innovation Office of ONU pursuits the following priorities:

¹ Europe 2020 Flagship Initiative Innovation Union: Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee of the regions from 6th of October 2010: http://ec.europa.eu/eu2020/pdf/COMM_PDF_COM_2010_0546_F_EN_COMMUNICATION.pdf

Align the internal innovation activity within the global trends and local needs, integrate the scientific potential of the University and the region to deliver result of social, economic and commercial potential.

To promote partnerships between research centers and businesses, at regional, national and international level; to enhance the quality of the business environment and to provide support to research and innovation at ONU.

To develop and strengthen the intellectual potential of the ONU, raise the value of its human capital and transform innovative knowledge into innovative products, thus promoting regional economy competitiveness.

To assist national and regional efforts to convert the economy on the innovative, post-industrial system, to create social awareness for the need of introducing of the economy of knowledge, to change local business environment for more proactive and innovation-oriented cluster of industrial and scientific potential.

6.1. The ONU Innovation office strategy consists of the following elements:

- a) Exposure, collection and estimation of commercial potential of the results of scientific, technical and research activity, objects of intellectual property rights, knowledge, patents, etc. of ONU.
- b) Defense of the intellectual property right.
- c) Preparation and implementation into the marketing form the objects future commercialization.
- d) Conduct of marketing research in relations of the commercialization of the results of scientific, technical and research activity, objects of intellectual property rights, knowledge, patents, etc. of ONU.
- e) Financial expertise of the results of scientific, technical and research activity, objects of intellectual property rights, knowledge, patents of ONU, development of financial terms for the agreements for commercialization and their further accompaniment.
- f) Teaching, advising and distribution of information in the area of commercialization and intellectual property right defense of ONU researchers.
- g) Help in creation by the ONU employees small enterprises, spin-offs, etc., based on the ONU technologies, licenses, patents, other objects of intellectual property right.
- h) Management of the database of the results of scientific, technical and research activity, objects of intellectual property rights, knowledge, patents, etc. of ONU.
- i) Cooperation with governmental and non-governmental organizations regarding financing the ONU scientific researches.
- j) Constant development the business partnership and conducting of negotiations on behalf of ONU with the Ukrainian and foreign companies, interested in the technology transfer.

6.2. The ONU Innovation office strategy is implemented in the following stages:

Stage 1. The Innovation office develops and represents to ONU Rector the commercialization plan of the ONU inventions, new knowledge and technologies, intellectual property rights, patents, results of scientific, technical and research activity, civilized commercialization of which will correspond to interests of ONU in the best way. Such commercialization plan is given in accordance with the previous experience of technology and knowledge transfer and analysis of regional, national and international scientific tendencies and priorities.

Stage 2. Discussion with Rector and insiders. The commercialization plan suggestions are presented for critics, discussion and updating together with ONU “Scientific-research sector”. This helps to find the compromise on the questions of financing of scientific researches, and also promote efficient cooperation between ONU “Scientific-research sector” and the Innovation office.

Stage 3. Defining the possible interested in the ONU inventions, new knowledge and technologies, intellectual property rights, patents, results of scientific, technical and research

activity businesses. The terms of financing of scientific directions must be drawn up clearly and. For this purpose information about the state financing of scientific researches, national and international grants, concluded treaties with businesses and other customers, has to be collected and summarized. Thus, maximum quantity of the potential sources of financing must be defined. Stage 4. Acceptation of the agreements of commercialization of the transfer of ONU inventions, new knowledge and technologies, intellectual property rights, patents, results of scientific, technical and research activity by Rector. As soon as the acceptance from ONU side is declared, the concrete agreement with the Innovation office as ONU representative, from the one side, and business representative, from the other side, is negotiated. The total budget for each specific agreement is approved by Rector. It is a basis for adjustment of the developed by the Innovation office commercialization plan.

Stage 5. Receipt of the necessary financing.

Stage 6. Commercialization plan implementation.

Stage 7. Monitoring of the process of commercialization plan implementation.

Stage 8. Analysis of the results of commercialization and estimation of the obtained profits.

Stages 6-8. The control of the plan fulfillment. The control is not related to the scientific achievements, but to the results of the Innovation office commercialization activity (see 6.5.). Thus, the Innovation office engagement in the process of planning of scientific researches commercialization allows most effectively to attract the additional financial resources.

6.3. The process of the commercialization transaction is corresponding to the mutual benefits of ONU and business representative (partner) and consists of:

6.3.1. First of all, the aims of the transaction have to be agreed and the desirable results determined. The benefits, which the partner expects to receive from the use of transaction object to be specified. At this stage the Innovation office staff also reevaluates the possible profits from the transaction.

6.3.2. Then, the preliminary agreement about the transfer is presented to the Rector and the research sector representative, co-ordination helps to fix responsibilities for necessary actions on a transfer, and also confirm the profit chart allocation on the transaction.

6.3.3. The details of the transaction are determined with the partner, the most suitable mechanism of transfer is fixed.

6.3.4. Legal examination of the contract is conducted, to make sure that no questions, from point of law, are missed out.

6.3.5. The authorized person from the side of the partner signs the agreement with ONU Innovation office.

6.3.6. The object of transfer is given to the partner, with support of the agreement and other technical documentation, description of know-how, results of scientific, technical and research activity of ONU.

6.3.7. During the period the agreement is in force, the Innovation office carries out the control that all the other obligations, besides financial, are in time and fully carried out. Transaction on a transfer can be simple procedure and be completed in the day of agreement signing, and could be stretched in certain period of time as well. At the second case, it is very important to communicate with scientists and researchers, to be sure that all the put to the agreement obligations are carried out. The Innovation office can coordinate and put the necessary changes to the agreement, and can terminate or liquidate the agreement.

6.3.8. During the period the agreement is in force, ONU gets the profits. Part of these profits is the indemnification of charges which were attended with a transfer. Other profits include royalties, payment for services and etc. The Innovation office makes the calculation of profits in accordance with internal documents (Step 2).

6.3.9. After the end of the agreement force and implementation of all the obligations by both parties, the Innovation office prepares for Rector the report about transaction.

6.4. Major risks for the ONU Innovation Office Strategy implementation are based on the distinctions of two different cultures: academia culture pursues the social aims of education, researches and services, based on a free exchange of ideas, providing the access to the objective information sources. Such academic freedom allows a scientist to execute research programs with the opened aims, to cooperate with colleagues, to publish results free of charge. The business programs of researches usually have the orientation on the income and limitation of publications because of the competition threats. Mutual influence of these two different cultures form problems between the representatives of business and ONU, especially in such key questions, as intellectual property rights, confidentiality, instead of publicity of the scientific results. The problems to be taken into consideration during the Innovation office Strategy implementation are as follows:

6.4.1. *Workload risk.* The more scientist is engaged to the researches for business, the less time he can spare for teaching and fundamental researches. It is advisable to introduce the regulative rules for the temporary obligations of scientists, in particular to design the salary rate, to develop the scheme when the scientist freely disposes the certain part of the working hours, including the work for the technology transfer agreements with business. Foreign experience testifies about expedience of selection for such practice one day in a week minimum. The ONU scientists put all additional contracts and consultations in the periodic reports.

6.4.2. *Transparency risk.* A problem touches the wrong use of the Innovation office resources, including the equipment, office space, materials, and also involving the graduate students and other researchers by ONU scientists, executing researches by agreement with business. It is recommended to introduce practice of the transparency requirement, as well the fixing of the technology transfer service operations in the written form. Thus, informative transparency of researches is supported, and the obstacles to distribution of knowledge are removed.

6.4.3. *Risk of informational distribution.* The representatives of ONU and business are advised to use the acceptable for both parties compromise model of cooperation, in order to promote a distribution of knowledge among students and society, from the one side, and defense the results of the researches from the other side. A compromise model can be based on the negotiation results, when a business partner gets the possibility of preview the scientific publication. It allows the partner to define the volume of opening the confidential information in the article, to terminate the publication for the period, necessary for the patent application registration.

6.5. The Innovation office activity should be monitored and assessed by two headlines: group of the indicators to evaluate the progress and the expected results of the Strategy of ONU Innovation office, developed as well with the use of “Performance Scoreboard for Research and Innovation”².

6.5.1. Group of the indicators for ONU Innovation office Strategy progress evaluation:

- amount of funding for joint contract research;
- number of registered discoveries, patents, license agreements, start-ups, initiated by ONU Innovation office staff;

² See Annex II “Performance Scoreboard for Research and Innovation” to the Europe 2020 Flagship Initiative Innovation Union: Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee of the regions from 6th of October 2010: http://ec.europa.eu/eu2020/pdf/COMM_PDF_COM_2010_0546_F_EN_COMMUNICATION.pdf

- amount of proceeds from commercialization of the results of scientific, technical and research activity for ONU;
- number of created spin-out companies and amount of the involved external financing;
- number of University employees who took part in professional development and upgrading programs;
- number of joint publications with companies, research institutes and other subjects of the innovative system of Ukraine;
- number of workshops, seminars, trainings and other studying events realized at ONU within the framework of contracts with external customers in the field of intellectual property management, in particular civilized commercialization, knowledge and technology transfer and intellectual property management;
- number of information events on knowledge transfer held by ONU.

6.5.2. The expected results of the Strategy of ONU Innovation office:

- Increased number of technology and knowledge transfer contracts concluded with external customers (10 contracts per year minimum with perspective of 25 per year within next five years).
- Increased number of partnerships for knowledge transfer with enterprises, organizations, and government agencies (involve 5 actors per year minimum with perspective of creating a network of 50 partners within next five years).
- Increased income from commercialization of the results of scientific, technical and research activity for ONU (achieve 10% annual growth rate reaching 500 000 UAH annual income within next five years).
- Increased income from knowledge and technology transfer and intellectual property management for ONU (achieve 10% annual growth rate reaching 500 000 UAH annual income within next five years).
- Forming at ONU an integrated system for supporting and protecting intellectual property rights, including the results of scientific, technical and research activity of ONU.