Protection of Intellectual Property at Institutions of Higher Education

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Abstract: Scientific and research activities form an important part of university’s activities. They contribute to educational process and qualification improvement of teaching staff by means of active participation in research and scientific work. The aim of the paper is to examine the existing intellectual property protection within the framework of universities, to reveal the main problems and collusions and to suggest possible solutions. The research is based on Russian and foreign researchers’ theoretical theses in the fields of intellectual property protection. By means of panel survey the main problems of protection of intellectual property created during educational process were revealed. The necessity to create a system of economic and judicial rules able to stimulate scientific and research work at institutions of higher education and effectively protect intellectual property was proved.

Key words: Scientific and research activities • Intellectual property protection • Small innovative enterprise

INTRODUCTION

Nowadays the majority of institutions of higher education (universities, academies) are interested in scientific and research activities.

Up to educational standards of the universities professors and lecturers are obliged to write a number of papers and publish them in specialized journals including journals cited by Scopus and ISI. In order to receive an academic status of docent several methodic publications (papers, articles, tutorials) are obligatory. Professors, lecturers and tutors who do not prepare papers and materials mentioned above can be discharged from the institutions of higher education.

The scientific work of professor or lecturer can be regarded as his investments in human and social capital. The institutions of higher education must provide opportunities for each professor, lecturer or tutor and create conditions to realize scientific and research work and provide effective protection of intellectual property. The existing system of intellectual property protection in Russia does not correspond to the requirements of research and scientific development in institutions of higher education [1].

It is assumed that scientific work at institutions of higher education includes:

- Classical scientific and research work, consisted of fundamental research, applied research and experimental development;
- Creating of new educational courses and methodic;
- Creating and publishing of papers textbooks and monographs and tutorial-books;
- Consulting of industrial enterprises;
- Education of scientific and teaching staff.

In order to stimulate the development of scientific and research activities at the universities it is necessary to present different grants for research work.

Universities are able to give professors or lecturers the following opportunities:

- To combine teaching and research activities;
- To participate in scientific conferences;
- To present the results of research and scientific activities;
- To publish papers in university journals, conferences books, text books, collections of scientific works;
To receive access to e-library and Internet.

All these will stimulate the research and scientific activities of professors or lecturers.

In order to make Russia a contemporary “educational-based country” and “intellectual property-based country”, it is necessary to carry out the protection of intellectual property rights on education courses and the activation of basic educational methods in institutions of higher education and create a mechanism to link such activation to the educational activities.

Intellectual property rights of lecturers and tutors are left unprotected in Russia. Existing situation causes a lot of problems because intellectual property rights protect innovations and creations and reward innovative and creative activity. Intellectual property rights are international in character and in that respect they fit in rather well with the economic reality of the global economy.

Theoretical Background: The research is based on the Russian and foreign researchers’ theoretical theses in the fields of intellectual property protection.

The main types of intellectual property, created in educational process are lectures, education methods and ideas. Knowledge can be represented as an archipelago made up of small islands that correspond to fields of knowledge that evolve independently. It is by having knowledge evolve and by bridging the gaps between the archipelago’s islands that the frontiers of the conceivable can be extended [2].

Idea is the main element of any object of intellectual property (creation, invention, innovation, etc.). But even the particular expression of an idea in Russia is left unprotected [3]. The use of the intellectual property right will provide an income its owner and this income will encourage him to continue his innovative work. Goods perish through use while intangible property is perpetual [4, p.17].

Ideas are developed based on different paths that allow them to benefit from various contributions, evolve, be combined and divided up and find the right intermediaries and support before materializing into successful innovations [5].

The Civil Code of Russian Federation gives a definition of so-called “employees creation”. Any work produced by an author within the scope of employment becomes the work of the employer for all copyright purposes-most importantly for purposes of depriving the author of any right to terminate the ownership by the employer [6, p.398].

Sometimes it is necessary to test whether skill, labor and judgment invested by the employee in the creation of the work are part of the employee’s normal duties (which can also be implied in the contract) or come within the special duties the employer has assigned to the employee [7, p.206].

Professors, lecturers and tutors are employees. And as employees they are subjects to the instructions of their employer (institutions of higher education). Professors, lecturers and tutors give lectures. The question is whom the content of the lecture, including generated ideas belongs to.

Contract of employment underline the general principle that the first owner of the copyright in a literary work created by an employee in the course of his employment will be the employer. Agreements to the contrary are possible though [8, p.206]. It is possible to solve this problem by means of contract terms (i.e. to give a detailed description of employee’s duties).

Lecturer must have the exclusive rights on manuscripts, lectures and ideas that were not specially commissioned and those that were not specially agreed at the time of commissioning or ordering work for hire.

Copyright of the lecturer will be infringed when the content of his lectures is sold or offered or exposed for sale or hire.

National Research Universities of Perm: The best universities of Russia received a special status of National research universities. This status is given for 10 years. Such universities receive better funding, participate in state grants. But each year they must demonstrate the results of university scientific and research activities.

Universities compete with each other in scientific, research and innovation activities. And the results of such activities are realized in the form of creations, papers, methods, inventions, databases, etc. The most successful universities receive better state funding. The main tendency is to divide the teaching staff of the universities into three groups:

- Teaching professors and lecturers,
- Scientist and researchers,
- Teaching scientists and researchers.
These forms are quite new. They come from The Law on Education of Russian Federation.

Scientific work at the universities includes also participation in different innovation and scientific projects granted by the state, the Russian Human Scientific Fund, the Russian Fund of Fundamental Research and other funds.

Developing of scientific research is one of the aims of national research universities in Russia. Infrastructure of National Research University is aimed to create favorable conditions for scientific and research activities and implementation of intellectual activity results. The scientific research at the university is realized under the supervision of special Scientific and Research Department.

Perm region possesses high scientific, research and professional base. Perm is an educational centre of the Western Urals. The major universities are Perm State National Research University, State National Research Polytechnic University of Perm, Perm State Teachers’ Training University, Perm State Medical Academy, Perm State Pharmaceutical Academy, Perm State Agricultural Academy, The Institute of Art and Culture, Perm State Choreographic School, Perm branch of State University Higher school of economics and others.

Perm State National Research University is one of Russia’s largest centres of research and education with a constantly developing infrastructure.

Perm State National Research University has facilities and conditions for producing and protecting intellectual property, created in educational process. Perm State National Research University possesses high quality staff of dynamic professors. It has rich experience of all-Russian and international cooperation.

The Perm National Research Polytechnic University is a multifield institution of higher education. It provides high-quality training and retraining of workers in a big range of technical, engineering specializations as well as natural science, economic-management and socio-humanities.

Perm National Research Polytechnic University provides training for specialists, develops all-human and professional competencies that allow the graduates to get adapted to the socio-cultural life of Russia and first-rate countries.

Institutions of higher education are the base for innovation clusters creating. They stimulate innovation development of regions and play an important role in forming “Innovative society” and innovative receptivity [9].

Small Innovative Enterprises: Scientists and researchers who work at the universities prefer not to take out patents for inventions, through the university [10-11]. They try to use inventions in their individual commercial activities. That is illegal, but universities practically can not stop such activities.

One of the forms that helps scientists and researchers to commercialize the results of their intellectual activities within the framework of universities is small innovative enterprise.

It is a new perspective organization form of innovation activity. Innovations produced by such enterprise do not require considerable investments or serious labor or energetic resources. The aim of small innovative enterprises is to create new technologies to use them in educational and research process.

Small innovative enterprise plays an important role in economic development of the country and in satisfying the needs of researchers, authors and creators of inventions and innovations.

Small innovative enterprises are independent innovation enterprises. Such economic agents provide implementation of the research results, assist organizing educational process, contribute to professional growth of teaching staff.

Small innovative enterprise is a daughter enterprise of the university. By means of small innovative enterprises university can support a group of active scientists and researchers from the university staff and give them an opportunity to earn money by implementing the results of innovation activities.

Colleges and institutes of higher education (universities, academies, institutes) can produce intellectual property. Exclusive rights on intellectual property belong to institutes of higher education. The results of innovation activities of institutes of higher education can be implemented and realized within the framework of small innovative enterprise. That is why institutes of higher education organize small innovative enterprises in the form of companies limited (Ltd) and joint stock companies. The right of use of intellectual property is invested in the capital of small innovative enterprises.

It is important to take into account that start-up of small innovative enterprise have 5 stages: a seed stage; a start-up stage; a growth stage; an expansion stage and exit stage. That’s why the results are expected only after successful passage of all stages when small innovative enterprise is organized and begins to produce innovations.
Table 1: Creation of intellectual property at institutions of higher education

<table>
<thead>
<tr>
<th>No</th>
<th>Questions</th>
<th>PNPRU</th>
<th>PSNRU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Answers (in % of all respondents)</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>1</td>
<td>Do you create intellectual property during educational process?</td>
<td>95,0</td>
<td>0,8</td>
</tr>
<tr>
<td>2</td>
<td>What kind (type) of intellectual property do you create?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>- industrial design</td>
<td>0,8</td>
<td>20</td>
</tr>
<tr>
<td>2.2</td>
<td>- invention</td>
<td>15,8</td>
<td>74,2</td>
</tr>
<tr>
<td>2.3</td>
<td>- creations (texts, lectures)</td>
<td>95,0</td>
<td>0,8</td>
</tr>
<tr>
<td>2.4</td>
<td>- trade mark</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2.5</td>
<td>- know-how (methods)</td>
<td>3,3</td>
<td>80,9</td>
</tr>
<tr>
<td>2.6</td>
<td>- others (database and etc.)</td>
<td>16,7</td>
<td>67,5</td>
</tr>
<tr>
<td>3</td>
<td>Is your intellectual property protected?</td>
<td>52,5</td>
<td>41,7</td>
</tr>
<tr>
<td>4</td>
<td>How is your intellectual property protected (in what form?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>- patent</td>
<td>0,8</td>
<td>99,2</td>
</tr>
<tr>
<td>4.2</td>
<td>- licence</td>
<td>1,7</td>
<td>98,2</td>
</tr>
<tr>
<td>4.3</td>
<td>- commercial secret</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4.4</td>
<td>- others</td>
<td>49,2</td>
<td>40,8</td>
</tr>
<tr>
<td>5</td>
<td>Are you satisfied by your intellectual property protection?</td>
<td>16,7</td>
<td>31,7</td>
</tr>
<tr>
<td>6</td>
<td>Can you use your intellectual property created during educational process?</td>
<td>72,5</td>
<td>1,7</td>
</tr>
<tr>
<td>7</td>
<td>Are there small innovative enterprises in your University?</td>
<td>23,3</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Do you work at small innovative enterprises in your University?</td>
<td>17,5</td>
<td>82,5</td>
</tr>
<tr>
<td>9</td>
<td>Do your colleges work at small innovative enterprises?</td>
<td>38,3</td>
<td>29,2</td>
</tr>
<tr>
<td>10</td>
<td>Do you create intellectual property in small innovative enterprises?</td>
<td>15</td>
<td>82,5</td>
</tr>
<tr>
<td>11</td>
<td>In what form do you create intellectual property in small innovative enterprises?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.1</td>
<td>- industrial design</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11.2</td>
<td>- invention</td>
<td>27,8</td>
<td>72,2</td>
</tr>
<tr>
<td>11.3</td>
<td>- creations</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11.4</td>
<td>- trade mark</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11.5</td>
<td>- know-how</td>
<td>11,1</td>
<td>89,9</td>
</tr>
<tr>
<td>11.6</td>
<td>- others (database and etc.)</td>
<td>77,8</td>
<td>22,2</td>
</tr>
<tr>
<td>12</td>
<td>Whom intellectual property created during education process, belongs to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.1</td>
<td>- university</td>
<td>23,3</td>
<td>29,2</td>
</tr>
<tr>
<td>12.2</td>
<td>- lecturer and professors</td>
<td>29,2</td>
<td>23,3</td>
</tr>
</tbody>
</table>

Small innovative enterprises form a part of innovation infrastructure of regions and they become active participants of innovation development of the country [12].

The Method of Research: The primary method of research is the panel survey of professors and lecturers. By means of panel survey different forms of intellectual property protection at universities were revealed. The questionnaire of panel survey was conducted from January to June 2012 among the professors and lecturers of Perm State National Researches University and Perm National Researches Polytechnic University (Perm region).

The aim of the panel survey was the identification of the main problems of protection of intellectual property created during educational process. The forms of intellectual property protection in educational process...
were analyzed. The attitude to creating and protecting of intellectual property used for educational process within the framework of state research universities was revealed.

Through the panel survey, questionnaires were spread among 120 professors and lecturers of Perm State National Researches University and Perm National Researches Polytechnic University engaged in educational process.

**The Results of Survey:** The survey results are shown in Table 1.

The study showed that more than 90% of professors and lecturers of both universities create intellectual property working at the university. But the number of professors and lecturers creating intellectual property at PNRPU (95%) is higher than in PSNRU (91.7%)

Only 16.7% (PNRPU) and 14.27% (PSNRU) of respondents are satisfied by the intellectual property protection. 29.2% of respondents (PNRPU) and 48.3% of respondents (PSNRU) consider intellectual property, created during educational process to be their own intellectual property. They insist that they can use such intellectual property freely without any limitation in different educational institutions where they can work.

About 23.3% (PNRPU) and 14.2% (PSNRU) of respondents believe that intellectual property, created during educational process belongs to universities. Quite a small number of respondents 17.5% (PNRPU) and 5.8% (PSNRU) work at small innovative enterprises. Only those who answered positively to question 8 (“Do you work at small innovative enterprises in your University?”) were asked question 11 (“In what form do you create intellectual property in small innovative enterprises?”). It was revealed that the only forms of intellectual property created in small innovative enterprises are inventions, know-how and databases.

**Findings of the Study and Suggestions:** Working at institutions of higher education professors and lecturers create lectures, education methods and ideas (intellectual property). They use such intellectual property freely without any limitation in different educational institutions where they can work. Professors and lecturers practically do not work at small innovative enterprises.

Scientists and researchers who work at the universities prefer not to take out patents for inventions, through the university. They try to use inventions in their individual commercial activities.

It is possible to suggest institutions of higher education to organize seminars on protection of intellectual property.

A permanent exhibition demonstrating the research results and scientific achievements of teaching stuff can be organized at the university. Such exhibition makes it possible to demonstrate textbooks and tutorial books, papers, monographs and scientific journals, published by the university and patents and licences on inventions, know-how, industrial designs, databases, created at the university.

It is necessary to work out a number of measures directed to creation and development of scientific and research communities. It is important to provide free access of scientists to contemporary industrial and information technologies and scientific information.

Creating the institutional mechanism of region's innovative development based on effective legal regulation is also very important [13-14].

**CONCLUSIONS**

Institutions of higher education cannot sufficiently protect intellectual property created by professors and lecturers during educational process and research. Professors and lecturers consider intellectual property, created during educational process to be their own intellectual property. Universities ought to provide an effective legal protection of intellectual property, copyright and other rights on innovations, inventions and creations.

These requires creating a system of economic and judicial rules able to stimulate scientific and research work at institutions of higher education and effectively protect intellectual property.

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**REFERENCES**

innovation activities in Russia (Institutional approach). World Academy of Science, Engineering and Technology, 29: 464-477.


8. See the previous entry.


