



Intellectual Property and University Corporate Security of the Education Based in Digital Environment

Vladia Borisova

University of National and World Economy, Bulgaria

Abstract

The use of the digital environment for e-learning and for creating a virtual image of the university or the education as a product is of special importance both for the development of the digital competitive education and for the corporate security of the service. The protection of the intellectual property of e-learning services of the university forms one of the main elements in the structure of their corporate security. The on-line education provides services and market products based on the protection of intellectual property and its licensing. These products in a digital environment can be protected by various technological security systems, but thus they do not always provide complete protection, they need protection via intellectual property rights. In this regard, in the digital learning environment, for the purposes of corporate security it is necessary to protect:

- *Technological inventions for online functionalities – online education platforms*
- *Software*
- *User interface*
- *Chips and integrated circuits*
- *Databases*
- *Domain name of the university*
- *Web design of the page*
- *Website content - illegal downloading and uploading of content – mainly learning documents*
- *The product itself*

Settlement of the rights of authors and inventors in the creation of intellectual property is a mandatory prerequisite for active university security (scope of rights, ownership of the material, guarantees, maintenance and update, confidentiality, guarantees, responsibilities, etc.). The lack of protection of intellectual property is a breach in university e-learning security, allowing the creation of a digital avatar of a competitive university / universities (drastic reduction of revenue, damage to the positive image, blocking e-learning service providing and misinformation in the distribution and distribution network). The universities whose activities are related to the creation and use of digital technologies hold a large part of the value of their business in intellectual property - a portfolio of intellectual property. The protection of intellectual property portfolio of the university builds the foundations of its e-learning security, which increases the quality of the provided online education, strengthens the positive image and the value of the university itself.

Keywords: *e-learning; IP rights, security; digitally based higher education*

1. Introduction

The reformatting of the working environment from “on-site” to “remote” as a result of the digital transformation of business and social interactions, created a new reality in the provision of goods and services which also made its impact on higher education. Digitalization created new opportunities and imposed a number of changes in the way education services are provided, the preparation and the content of education materials, the communication with students, the conduct of scientific research, the establishment of academism and the maintenance of academic traditions in education. A new challenge has arisen for universities – their digital presentation, indicating their institutional academic capacity, the promotion of their education services and scientific products in the digital environment, their business reorientation through the development of entrepreneurship skills, the development of a positive image, the expansion of the consumer segment towards international markets and the formation of consistent demand for their education services, the buildup of digital communication skills, etc. All those new skills



made the universities face the necessity for the creation, identification and management of intellectual property, its transfer for business purposes and its recognition as one of the main factors for their corporate security and digital competitiveness. Branding gained significant importance for universities which conducted online education because it is a means for popularization, the development of a positive image, competitiveness and communication with clients, the potential student audience. In this sense some objects of intellectual property, which have marketing value, turned into business identifiers for corporate security and digital competitiveness of universities, such as:

- The trademark/s of the university – it provides distinctiveness, forms an identity and grants a trade monopoly
- Domain name/s of the university – it presents the identity of the organization in the digital environment beyond the identity which is presented by the physical system of the trademarks.

Despite that, online education is linked also to the creation and management of objects of intellectual property which are directly integrated in the education process and mediate the process of providing access to the relevant products and services – e.g. the system for online education itself and the functionalities of the platform, the software, the databases, the integrated circuit, if it is separately developed, the web design of the education web page and of the web page of the university, faculties, departments, institutes, centers, the education materials themselves, the inventions, utility models, industrial designs (when the research profile of the university allows for their development) and the organizational, management, administrative or technological know-how, when such has been developed. All objects of intellectual property of the university form its IP Portfolio and actively participate in the formation of the image of the university, its competitiveness, corporate security, also participate in the generation of own revenue and in cases such as when the university is private, the objects add value to the overall value of the whole business of providing education services. As such the intellectual property despite being a main factor for corporate security and digital competitiveness of the university, also becomes a business resource, which besides having the ability to generate additional revenue through its transfer, can also increase the value of already existing assets of the university.

2. The role of intellectual property for the development of corporate security and competitiveness of universities in a digital environment

Establishing an environment where intellectual property contributes for the corporate security and digital competitiveness of universities and at the same time it is a business resource which generates additional revenue and participates in the adding of value of already existing assets of the university is directly related to the drafting of an intellectual property policy and the availability of certain factors related to its implementation.

The intellectual property policy of universities is a strategic document which should conform to the management strategy and the profile of the university. Because of that there is not a universal intellectual property policy which can be applied for all universities but there are certain issues which every policy should settle. This strategic document helps universities in the fulfillment of their socioeconomic role through providing access to education and scientific results via transfer of knowledge and technologies, where the intellectual property policy:

- establishes the common understanding of intellectual property of the university, its identification, the intellectual property rights which arise for the university, professors, partners, etc.
- establishes the structure and the way in which the university manages its intellectual property and generates revenue from it, or it uses it for increasing the value of other owned assets
- establishes the way in which the university develops certain entrepreneurship activities and builds relationships with representatives of business
- establishes the way in which the university fulfills its social role especially as it relates to the dissemination of knowledge and technologies.

In this sense on the one hand the intellectual property policy regulates important issues regarding the activities of the university, related to the education, including online education, as well as to the research activities and economic realization of the scientific results and objects of intellectual property, such as inventions, utility models, industrial designs, know-how. On the other hand, it regulates issues related to the presentation of the academic institution in an online environment – the branding, the development and



establishment of positive academic and entrepreneurship image. The issues which every strategic document in the field of intellectual property should regulate are related to:

- The identification of the objects of intellectual property of the university considering the profile of the university (inventions, utility models, know-how, copyright);
- The identification of the owner of the intellectual property (who has the right to economically realize the object), including the degree of participation of students/doctoral students in the creation of the object of intellectual property
- Designation of internal university organs for obtaining protection for the objects of intellectual property
- Determining the obligations between the university and the academic staff, researchers, students and external cooperating organizations and experts
- The procedure and rules for commercialization of the scientific results and objects of intellectual property
- The rules for creation and/or participation in spin-off and/or start-up companies
- The standards for confidentiality and publication activity
- The principles for distribution of revenue from the economic realization of the objects of intellectual property
- The rules and procedures for conflicts of interest
- The system of contacts and cooperation with representatives of industry (relations regarding intellectual property)
- The degree of access and participation of the university in the scientific infrastructure of the country in the relevant field
- A special policy for the open access to scientific results and intellectual property of the university
- The procedures for communicating the intellectual property policy of the university to the academic staff, researchers, students and external cooperating organizations and experts.

The availability of certain factors is of significant importance to the implementation of the intellectual property policy and for its use as a main factor and a business resource of the university. The factors are grouped by importance and there are two main groups – external (for the university) factors and internal factors. The external factors are the local ecosystem on the level of country policy in the field of higher education, namely:

- Do state institutions support innovation activity through close cooperation between universities and business following the model A2B
- What state initiatives and resources have been provided to support innovation activity following the model A2B
- Are there developed industries in the region where the university is located
- Is there a developed innovation network between innovation partners such as universities, laboratories, incubators, researchers, technological parks, spin-off companies, venture capital companies, etc.

When the local ecosystem is built on factors which support the functioning of the model A2B, then the internal factors become of significant importance, namely:

Entrepreneurship orientation – is entrepreneurship among students, academic staff and external partners being promoted; is the creation of spin-off companies in partnership with industry being promoted; is risk-taking in the creation of innovation, establishment of partnerships, cooperation with industry and conduct of applied research being promoted.

Financial provision of the protection and commercialization of intellectual property – is there a fund for financing of the commercialization of intellectual property and the creation of spin-off companies; can the costs for protection of intellectual property be covered by the budget of the projects which are developed at the university; are there resources to cover the cost of consultations with external intellectual property experts; are there resources for the purpose of motivating research activity; what resources have been allocated for R&D and what resources are expected from the transfer of knowledge and technologies.

Target audience – what needs does the university meet - societal needs, those of the local industry, its own; what kind of intellectual property does it create and commercialize – software, databases, inventions,



biotechnologies; what is identified as object of copyright – publications, research papers, reports, education materials, etc.; does it have a license for access to digital databases for rated research portals. Where it is related to online education and work in a digital environment the intellectual property policy should envision certain specificities regarding:

- Technological protection measures – online agreements, encryption, control over the access to content, watermarks, version with low quality and insufficient content
- Training of lecturers and staff – what is intellectual property in a digital environment, how it is used and managed, confidentiality with regards to the information about the IP Portfolio
- Measures to counteract the infringement of intellectual property in a digital environment – screenshots and source code of the infringer; evidence for the existence of intellectual property over the content of the website; warning letters for termination of the act of infringement; messages about the infringement to the web search engines and the website hosting company or the internet service provider with a request to remove the registration of the infringer, etc.

The significance of intellectual property will increase with time and not only for the corporate security and digital competitiveness of the universities conducting online education. The factors which determine this are called technological development, artificial intelligence, virtual and augmented reality, and the advantages that they generate for science and education on a global scale. Intellectual property has been a basis for sustainable a development of business for years and with the online education it also became the basis for the sustainable development of higher education. By using it universities increase the quality of education and science, ease the access to education services, widen their types and target audience, develop entrepreneurship activities, communicate interactively, and cooperate for the integration and sustainability in the socioeconomic system on a national, regional and international level.

References

- [1] C. Serrao, J. Marques, A. Mendes, Protecting intellectual property rights on e-learning systems, EDULEARN09 Proceedings, 2009, ISSN: 2340-1117, 658-667
- [2] Mehrpouyan A., Khadem Razavi G., Legal Issues of Intellectual Property Rights and Licensing for E-Learning Content in the United Kingdom, E-Learning and Digital Media Vo.11, Num. 3, 2014: <https://journals.sagepub.com/doi/pdf/10.2304/elea.2014.11.3.272>
- [3] Hart R., Holmes P., Reid J., 'The Economic Impact of Patentability of Computer Programs': http://www.europa.eu.int/comm/internal_market/en/intprop/indprop/study.pdf/
- [4] Alwi, N. H. M., Fan, I. S., E-learning and information security management. International Journal of Digital Society, 1(2), 2010, 148-156