

Ministry of Education and Science of Ukraine
**ODESSA NATIONAL ACADEMY OF
FOOD TECHNOLOGIES**

International Competition of
Student Scientific Works

**BLACK SEA
SCIENCE 2020
PROCEEDINGS**



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Ministry of Education and Science of Ukraine
Odessa National Academy of Food Technologies

International Competition of Student Scientific Works

BLACK SEA SCIENCE 2020

Proceedings

Odessa, ONAFT 2020

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2. ECONOMICS AND **ADMINISTRATION**

THE IMPORTANCE OF THE INTELLECTUAL PROPERTY IN PROMOTING THE INNOVATIVE ENTREPRENEURSHIP

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Abstract. *In the modern world the intellectual property (IP) plays an important role in generating new creative ideas for companies. The intellectual property, invention, creativity and innovation are considered the main elements which foster the entrepreneurship. The IP process is a key factor for the economic development. At the same time, it has a long history, conditioned by the main changes in the goods and services market. The word such as „know – how”, „patents”, „copyright”, „trademarks”, „industrial design right” are the most important to define the intellectual property.*

Through this research the authors have proposed to present the notion of “intellectual property” and its key-elements, as well as its role in fostering innovation and entrepreneurship. The role of intellectual property and its development trends were analyzed, by highlighting countries’ practices in enhancing the role of IP in developing innovative entrepreneurship. A special focus of the paper is the analysis of IP development in the Republic of Moldova and comparative analysis with its neighboring country – Ukraine.

Key words: *intellectual property, know – how, patents, copyright, trademarks, industrial design rights, trade secrets, entrepreneurship, innovation.*

“Intellectual property is playing an increasingly important role for our group. It’s just a fact of life in our business now that you have to cultivate and protect IP”
(Rudy Provoost)

Introduction

The role of intellectual property in all areas of activity has increasingly considerably. New business ideas appear, new companies are founded. To be unique on the market, the entities register it brand under it own name. And also, choose it own color, format, symbol and activity. Many business ideas fail in a short term, others focus on the needs of consumers and achieve the desired success. The intellectual property

Every state adopt policies, strategies, and take concrete steps in the protection of the intellectual property, because the intellectual property is an important aspect in the economic development.

The subject is very actual in the context in which the intellectual property generates the scientific progress, creates a lot of opportunities, protects firms, and offers the competitive advantage.

This research paper has the following objectives:

- analysis of the concepts of , consulting the specialty literature and the Law;

- analysis/ research of the trends in the IP development, focusing on several specific different countries;
- analysis of the IP in the Republic of Moldova in comparison with neighboring country – Ukraine;

Understanding the relationship between intellectual property and innovative entrepreneurship it's necessary to investigate how different countries apply policies and strategies for promotion and development of innovations and entrepreneurship.

Literature overview

The role of IP in innovative entrepreneurship

In the knowledge dominated economy, IP occupies an important place. The significance of traditional tangible assets such as land, labor, capital etc. is reducing and intangible assets (IA) such as information, creativity and inventiveness are receiving more attention. IP has made its way in accounting books of an organization. Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used mainly in commerce.

According to The Law of the Republic of Moldova no. 114 from 03.07.2014 regarding the State Agency for Intellectual Property (Chapter I, art.3) the intellectual property are the objects that result from the intellectual activity in the industrial, economic, commercial, scientific, informational, literary and / or artistic fields, as well as in other fields.

These authors (Falvey, Foster, 2006) consider that the main purpose of the intellectual property law is to encourage the creation of the wide variety of intellectual goods.

The know – how can be defined in various ways. According to World Intellectual Property Organization (WIPO), trademark is a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises. Trademarks are protected by intellectual property rights. The know – how means specific knowledge, held by a person or an enterprise, over a product or manufacturing process, very often obtained through important and expensive research and development works. Also, the term of know – how includes a lot of technical information, which are secret, substantial and identified.

Gallini (2002) notes recent increase of patenting in new fields like biotechnology, software and business methods, and increased number of patents in these areas. In comparison with the 1980s, new patent applications in the USA to domestic inventors more than doubled by the late 1990s. Biotechnology and software patent grants doubled between 1990 and 2000. When talking about patent is understood a form of right granted by the government to an inventor or their successor-in-title, giving the owner the right to exclude others from making, using, selling, offering to sell, and importing an invention for a limited period of time, in exchange for the public disclosure of the invention. An invention is a solution to a specific technological problem, which may be a product or a process and generally has to fulfill three main requirements: it has to be new, not obvious and there needs to be an industrial applicability. To enrich the body of knowledge and stimulate innovation, it's compulsory for patent owners to disclose valuable information about their inventions to the public. "The history of patents does not begin with inventions, but rather with

royal grants by Queen Elizabeth I (1558–1603) for monopoly privileges... Approximately 200 years after the end of Elizabeth's reign, however, a patent represents a legal right obtained by an inventor providing for exclusive control over the production and sale of his mechanical or scientific invention... [demonstrating] the evolution of patents from royal prerogative to common-law doctrine" (Mossoff, 2001).

A copyright gives the creator of an original work exclusive rights to it, usually for a limited time. This idea is supported by Stokes (2011), who considers that copyright may apply to a wide range of inventive, intellectual, or artistic forms. Copyright does not cover ideas and information themselves, only the form or manner in which they are expressed. The specialty literature suggests some rules according to copyright:

- Copyright law protects creators of original material from unauthorized duplication or use;
- For an original work to be protected by copyright laws, it has to be in tangible form;
- In the U.S., the work of authors is protected by copyright laws until 70 years after their death.

So, what exactly is a trademark? Broadly speaking, the term "trademark" refers to recognizable sign, design or expression which differentiates products or services of a particular trader from similar products or services of other traders.

An important element of the intellectual property is the industrial design, simply, it is what makes a product look attractive, and increases the commercial value of goods. In other words, the industrial design represents a successful combination of colors, shapes, dimensions, configuration, containing aesthetic value.

A trade secret is a formula, process, design, instrument, pattern, or compilation of information which is not generally known, by which a business can obtain an economic advantage over competitors and customers. There is no formal government protection granted; each business must take measures to protect its own trade secrets (example: Formula of its soft drinks is a trade secret for Coca-Cola.)

According to the Law of the Republic of Moldova no. 845 from 03.01.1992 regarding entrepreneurship and business (Chapter I, art. 1), the entrepreneurship is the activity of manufacturing the production, execution of the works and the provision of services, carried out by citizens and their associations independently, on their own initiative, on their own behalf, at their own risk and under their patrimonial responsibility in order to ensure a permanent source of income. In this context, an entrepreneur is the person who practices a certain type of activities and pursues economic benefits, sometimes having losses from economic activity.

Innovation is spread across all areas, being considered an important generator of new ideas and inventions that have changed the world. In the literature exist a series of definitions and explanations of innovation. This idea is supported by Maranville (1992), who is agree that innovation represents the application of better solutions that meet new requirements, unarticulated needs, or existing market needs. According to Frankelius (2009) innovation is something original and more effective and, as a consequence, new, that "breaks into" the market or society. According to the Kanter

(1997) the innovation includes original invention and creative use. Widely, in the modern world are used process innovation and product innovation.

Object, subject and methods of study

A special focus of the paper is to analyze the performance of different states in the field of intellectual property, what are the gaps and what aspects can be improved. Finally, it will be possible to forecast optimistic data for Republic of Moldova.

As the object of study represents the intellectual property and its role in fostering the innovation and entrepreneurship.

In order to estimate how the intellectual property can contribute in promoting the innovative entrepreneurship, concrete countries are taken as an subject of study and the evolution of the intellectual property in these countries (China, Japan, Norway, Belgium, US, Romania).

As methods of study are used mainly the conceptual analysis/approach analysis related to such concept as: intellectual property, know – how, patents, copyright, trademarks, industrial design rights, trade secrets, entrepreneurship, innovation.

Also is used the empirical and statistical analysis to identify the main trends in the global level related by the intellectual property.

The comparative analysis allows to identify the main differences between Moldova and Ukraine in terms of the IP.

In order to bring value to this research, a questionnaire was elaborated and disseminated to Moldovan citizens to identify and achieve citizens' perceptions about word IP. The questionnaire was filled by 59 respondents.

The evolution of the IP at the international level

Innovation is increasingly concentrated in urban "hotspots". At the same time, these hotspots are connecting and collaborating across the world. New players, particularly Asian countries, are responsible for more and more scientific research and inventions, which were once the almost exclusive domain of a handful of rich economies. At the same time, this greater international spread has been accompanied – at country level – by increased concentration of innovative activity within a few densely populated areas. These urban areas are vibrant innovation ecosystems, such as Silicon Valley outside San Francisco in the U.S or China's Shenzhen–Hong Kong, a more recent hotspot. This paradox is more apparent than real, however; the world's most innovative urban agglomerations are also the most open to the outside world. Sometimes, they are better connected internationally than they are to their national hinterlands. Together, they form what economists have come to refer to as global innovation networks. Skilled individuals and innovative companies are at the center of these networks. Highly skilled workers gravitate toward innovative urban areas because they want to interact with one another and enjoy the amenities of metropolitan life. Large cities offer companies a large local market, specialized suppliers and academic institutions that allow them to reap economies of scale and scope. Knowledge, in turn, flows more fluidly among company and university researchers when they work in close proximity, fueling the innovation engine. This WIPO report analyses these dual trends, exploiting a rich data set of millions of patent applications and scientific publications. Its findings argue for increasing openness and support for

collaboration if innovation is to continue to flourish (WIPO report, 2019 – Executive Summary).

In Luxembourg carries out its activity a patent office - Freylinger Patent and Trade Mark Attorneys. They offer a comprehensive range of intellectual property services covering patents, trademarks, designs and copyrights. This includes receiving worldwide protection, portfolio management, strategic advice, commercial advice, licensing, enforcement, due diligence and also litigation. In the table 1 are illustrated states and type of services provided by this agency.

In conclusion, in the Europe exists a lot of IP offices. The offices which obtained a great number of elements of intellectual property are located in Austria, Belgium, France, Germany, Ireland, Luxembourg, and also United Kingdom.

Intellectual property rights (IPRs) have been acknowledged and protected in China since the 1980s. China has acceded to the major international conventions on protection of rights to intellectual property. In the same year, China joined the World Intellectual Property Organization (WIPO). China acceded to the Paris Convention for the Protection of Industrial Property on December 19, 1984 and became an official member on March 19, 1985 and also acceded to the Madrid Agreement for the International Registration of Trademarks in June 1989.

Table 1. – Trademark and Design protection in Luxembourg and Belgium obtained via the Benelux trademark and Benelux design granted by the Benelux Office for Intellectual Property (BOIP)

| IP OFFICES | PATENTS | TRADEMARKS | DESIGNS | FORMALITIES – PATENT VALIDATIONS | FORMALITIES – RECORDALS BEFORE REGISTERS |
|------------------------|---------|------------|---------|----------------------------------|--|
| EUROPEAN PATENT OFFICE | ✓ | | | | ✓ |
| EUIPO | | ✓ | ✓ | | ✓ |
| BENELUX OFFICE | | ✓ | ✓ | | ✓ |
| AUSTRIA | ✓ | ✓ | ✓ | ✓ | ✓ |
| BELGIUM (*) | ✓ | ✓ | ✓ | ✓ | ✓ |
| FRANCE | ✓ | ✓ | ✓ | ✓ | ✓ |
| GERMANY | ✓ | ✓ | ✓ | ✓ | ✓ |
| IREALND | ✓ | ✓ | ✓ | ✓ | ✓ |
| LUXEMBOURG (*) | ✓ | ✓ | ✓ | ✓ | ✓ |
| SWITZERLAND | ✓ | | | ✓ | ✓ |
| UNITED KINGDOM | ✓ | ✓ | ✓ | ✓ | ✓ |

Source: Office Freylinger Patent and Trademark Attorneys. Available online at: <http://freylinger.com/world-intellectual-property-protection/> [accessed on 21.01.2020]

(*) Trademark and Design protection in Luxembourg and Belgium are obtained via the Benelux trademark and Benelux design granted by the Benelux Office for Intellectual Property (BOIP)

The enforcement of protection of intellectual property rights is particularly difficult in the People’s Republic of China (PRC). Without adequate education with regard to intellectual property rights (IPRs), there is little awareness that infringement is a crime. Sometimes local protectionism may dilute the strength of central legislation

or the power of law enforcement. For instead, local governments might not want to genuinely support the work of copyright protection supervisors. It may create obstacles during IPRs investigation and assist local counterfeiters by letting them hide their production lines in safer places. When counterfeiters have good connections with local governmental or law enforcement officials, they may find an umbrella for their counterfeiting activity (Priest, 2006).

In the figure 1 there are some data from Nicholas Lardy at the Peterson Institute for Economics (April 20, 2018). This figure illustrates the rise total payments from China to all countries for the use of foreign intellectual property (the most relevant data – 1997 – 2017).

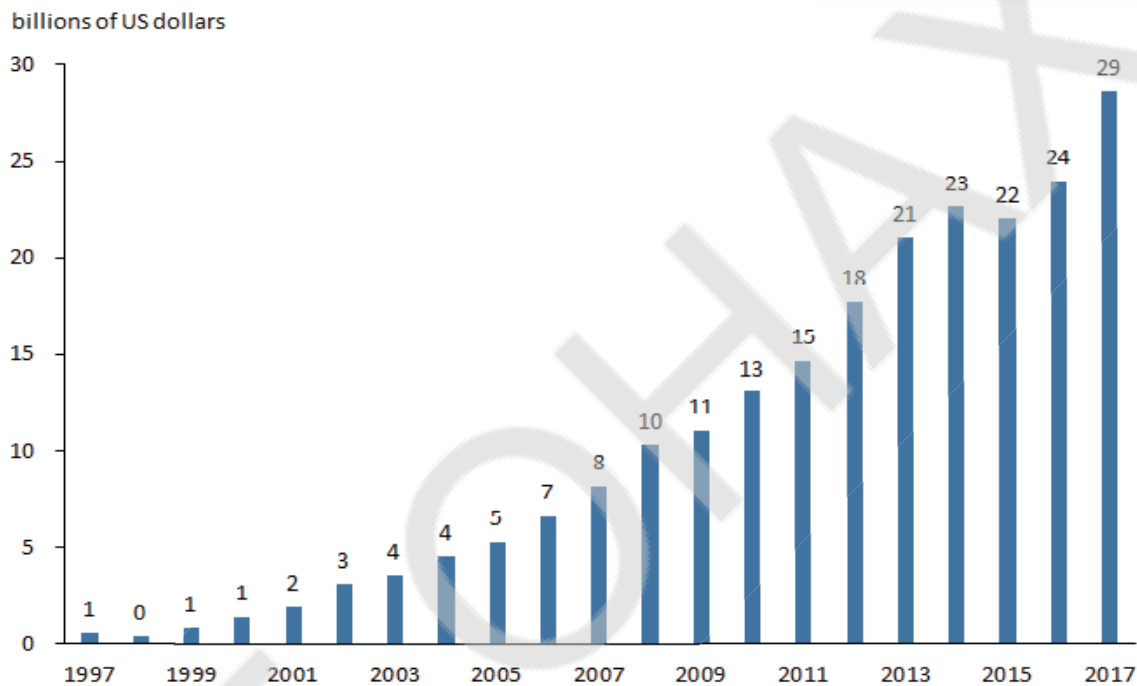


Fig. 1. Chinese payments for the use of foreign intellectual property, 1997 – 2017

Source: State Administration of Foreign Exchange of China. Available online at: <http://conversableeconomist.blogspot.com/2019/07/payments-from-china-for-foreign.html> [accessed on 23.01.2020]

According to the figure, there is a considerable increase in the expenditure for IP (almost 29 billions dollars in 2017) in comparison of 2015 when the expenditure represented 24 billions dollars. This fact demonstrates the importance of IP in consolidating of entrepreneurship and innovations. The knowledge also requires development costs.

In terms of patents, in 2018, the number of patent applications for inventions in China was 1.542 million. A total of 55,000 PCT international patent applications were received, marking a 9.0% increase year-on-year. 52,000 PCT applications were filed by domestic applicants, a 9.3% increase year-on-year. Foreign applicants filed 14.8 millions of applications for invention, marking an increase of 9.1% year on year. Figure 2 shows the increase of invention applications in China.

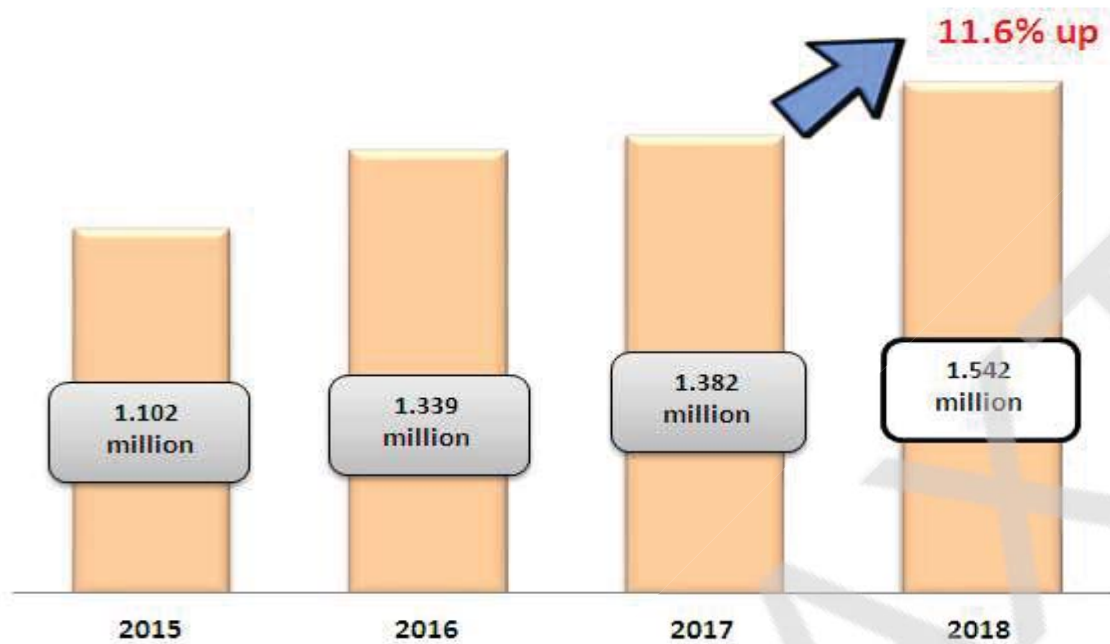


Fig. 2. Statistics of invention applications in China 2015-2018

Source: CNIPA released China’s Intellectual Property statistics for 2018. Available online at: <https://www.lexology.com/library/detail.aspx?g=f0e85203-cefa-4938-a124-c736cf4c8cc0> [accessed on 23.01.2020]

As the reference year serves 2018, when invention applications reached 1.542 millions, almost 12 %. For the next years, an increase of another 12 % is expected. That’s because China is a fast economy, with the most important innovations and creative start - ups.

In term of invention patents, China has ten domestic companies, the most inventive. In table 2 are represented these companies near the volume of inventions patents.

Table 2. – Top 10 China domestic companies in invention patents granted in 2018

| | Company Name | Volume |
|----|--|--------|
| 1 | Huawei Technologies Co. Ltd. | 3.369 |
| 2 | China Petroleum & Chemical Corporation | 2.849 |
| 3 | Guang Dong OPPO Mobile Telecommunications Corp., Ltd | 2.345 |
| 4 | State Grid Corporation of China | 2.188 |
| 5 | BOE Technology Group Co., Ltd | 1.891 |
| 6 | Gree Electric Appliances, Inc. of Zhuhai | 1.834 |
| 7 | Lenovo (Beijing) Co., Ltd. | 1.807 |
| 8 | Tencent Technology (Shenzhen) | 1.681 |
| 9 | ZTE Corporation | 1.552 |
| 10 | Corporation PetroChina Company Limited | 1.129 |

Source: CNIPA released China’s Intellectual Property statistics for 2018. Available online at: <https://www.lexology.com/library/detail.aspx?g=f0e85203-cefa-4938-a124-c736cf4c8cc0> [accessed on 23.01.2020]

The most famous company according to the volume of patents is Huawei Technologies Co. Ltd., a leading global provider of information and communications technology infrastructure and smart devices. Huawei's end-to-end portfolio of products, the best solutions and services are both competitive, practical and secure. The same China Petroleum & Chemical Corporation produces and trades petroleum and petrochemical products. The Company offers gasoline, diesel, jet fuel, kerosene, ethylene, synthetic fibers, synthetic rubber, synthetic resins, and chemical fertilizers. These companies apply a lot of innovations to develop their products and services to the highest quality standards.

In recent years, intellectual property in Japan is generating soaring revenue¹. Intellectual property, which applies to intangible assets including brands, copyright, patents and industrial designs, covers everything from cultural icons like Super Mario and Hello Kitty to robotics advances by Fanuc Corp. The statistics show that food and beverages, motor vehicles, computers and electronics products, and machinery and equipment are among categories ranking highest in income globally from intangible capital, according to the World Intellectual Property Organization.

In Japan are implemented measures and basic policies to protect the IP. The proper protection of intellectual property (IP) rights promotes technological progress and sound competition, and also contributes to achieving affluent lifestyles and the development of society.

For example, the Mitsubishi Electric Group recognises that intellectual property (IP) rights represent an indispensable management resource essential to its future and must be protected. Through integrating business, R&D, and IP activities, the Group is actively strengthening its global IP assets, which are closely linked to the Group's business growth strategies and play a key role to both business and society, and also working on protecting IP rights. Therefore, it's possible to analyze structure of intellectual property division through elements illustrated in figure 3.

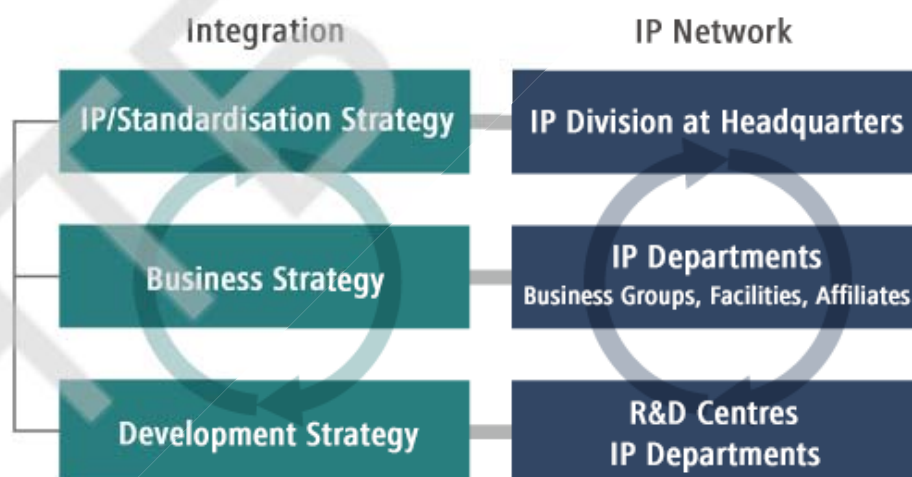


Fig. 3. Integrating Business, R&D and IP Activities

Source: R&D/technology Protection of Intellectual Property Rights. Available online at: <https://nl.mitsubishielectric.com/en/about/global/rd/ip/index.html> [accessed on 24.01.2020]

¹ rising incomes

All elements are connected to each other, it's not possible developing a policy without another one, because in business it's necessary a complex analytical thinking and also creativity to obtain success.

In 2018 (the most relevant data), in Japan has increased the number of registered patents. Table 3 presents the number of patents and the applicant companies/trademarks.

Table 3. – Number of patent registrations, 2018

| Rank | Applicant | Number of patents |
|------|---------------------|-------------------|
| 1 | Mitsubishi Electric | 4,348 |
| 2 | Canon | 4,288 |
| 3 | Toyota Motor | 3,301 |
| 4 | DENSO | 3,285 |
| 5 | Panasonic | 2,630 |

Source: R&D/technology Protection of Intellectual Property Rights. Available online at: <https://nl.mitsubishielectric.com/en/about/global/rd/ip/index.html> [accessed on 24.01.2020]

A greater number of patents was registered by Mitsubishi Electric (4,248) and Canon with a difference of 60 points.

As a state of analysis is Norway. In Norway activates Norwegian Industrial Property Office with a variety of services, such as:

- Trademarks;
- Designs;
- Patents / inventions;
- Other services: digital services, copy services.

Norway is the first at signing of the international agreements related by the intellectual property. Usually these treaties are signed for a long term:

➤ Patent Cooperation Treaty (PCT) – 20 years, an international patent law treaty, concluded in 1970. It provides a unified procedure for filing patent applications to protect inventions in each of its contracting states.

➤ Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks – 10 years; the system makes it possible to protect a mark in a large number of countries by obtaining an international registration that has effect in each of the designated Contracting Parties.

➤ Berne convention For the Protection of Literary and Artistic Works – 70 years, deals with the protection of works and the rights of their authors.

In Belgium also exists the Office for Intellectual Property, which regulates concrete policies for the development of the Intellectual Property. The OPRI's general mission is to protect intellectual property in Belgium. To the end, it is responsible for issuing and handling Belgian industrial property certificates, providing users with information on intellectual property, preparing legal texts, advising governments and representing Belgium internationally.

Figure 4 presents how increase the number of patents applications in the last years.

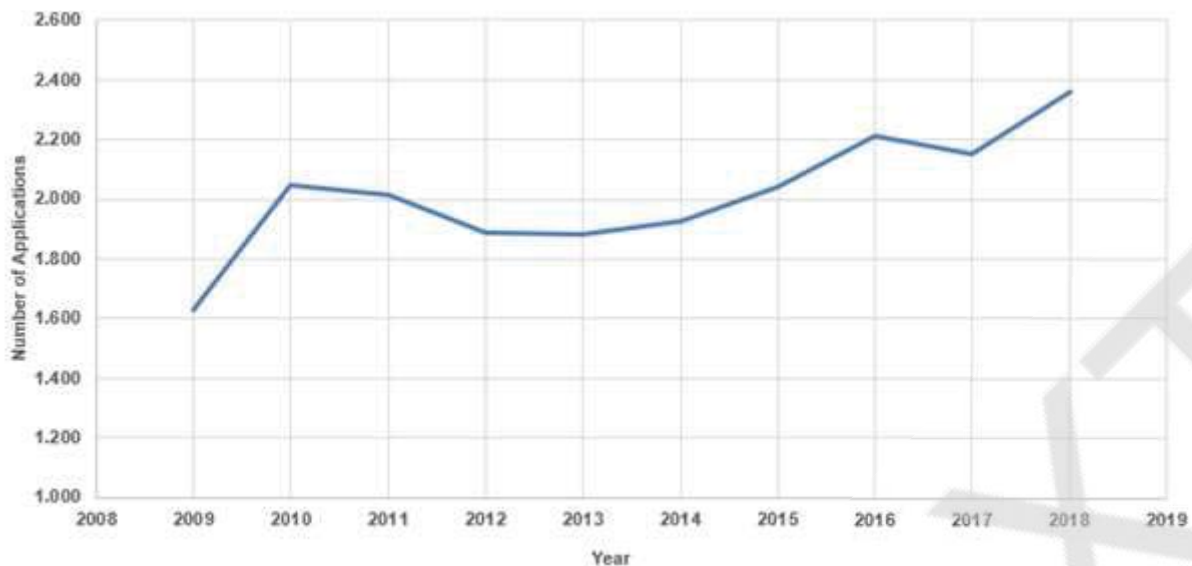


Fig. 4. Development of the applications from Belgium

Source: *sirris driving industry by technology*. Available online at: <https://www.sirris.be/belgian-company-patents> [accessed on 24.01.2020]

In 2018, the European Patent Office (EPO) registered 2,360 patent applications filed by Belgian companies and inventors, which represents an increase of 9.7% compared with 2017. Therefore, it's possible to appreciate an impressive growth of patent in the Belgium.

In the context of the ascending development of Belgian applications, it's essential to present the main 10 Belgian applicants, represented in figure 5.

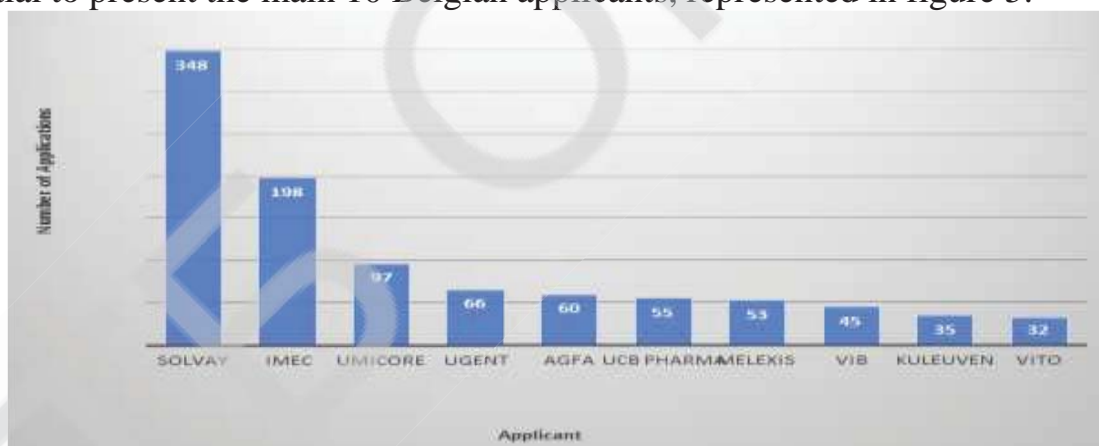


Fig. 5. Top 10 Belgian patents applicants

Source: *sirris driving industry by technology*. Available online at: <https://www.sirris.be/belgian-company-patents> [accessed on 24.01.2020]

Solvay is the top Belgian applicant to the EPO (348 applications). Followed by Imec (198 applications), Umicore (97 applications), Ghent University (66 applications) and Agfa (60 applications). Below in the top are situated VIB (45 applications), Kuleuven (35 applications) and VITO (only 32 applications).

US is a country with a vast creative potential. To protect the IP are implemented different toolkit.

According to the patents there are two agreements already signed, the Patent Cooperation Treaty (covering patents) and Hague Agreement (covering designs).

In the US practice, a trademark is a word, phrase, symbol, or design, or both, that identifies and distinguishes the source of the goods or services of one part from those of others. A U.S. trade mark generally lasts as long as the trade mark continues to be used and is defended against infringement. To keep a registration alive, the registration owner must file required maintenance documents at regular intervals.

Trade secrets are protected in the U.S. as long as the information is a secret, has commercial value, and reasonable steps are taken to protect that information. What is a “reasonable effort” to protect a trade secret may vary depending on the nature of the information you wish to protect. For businesses, implementing an effective trade secret policy is advisable.

Figure 6 designs the US companies granted the most patents in 2018.

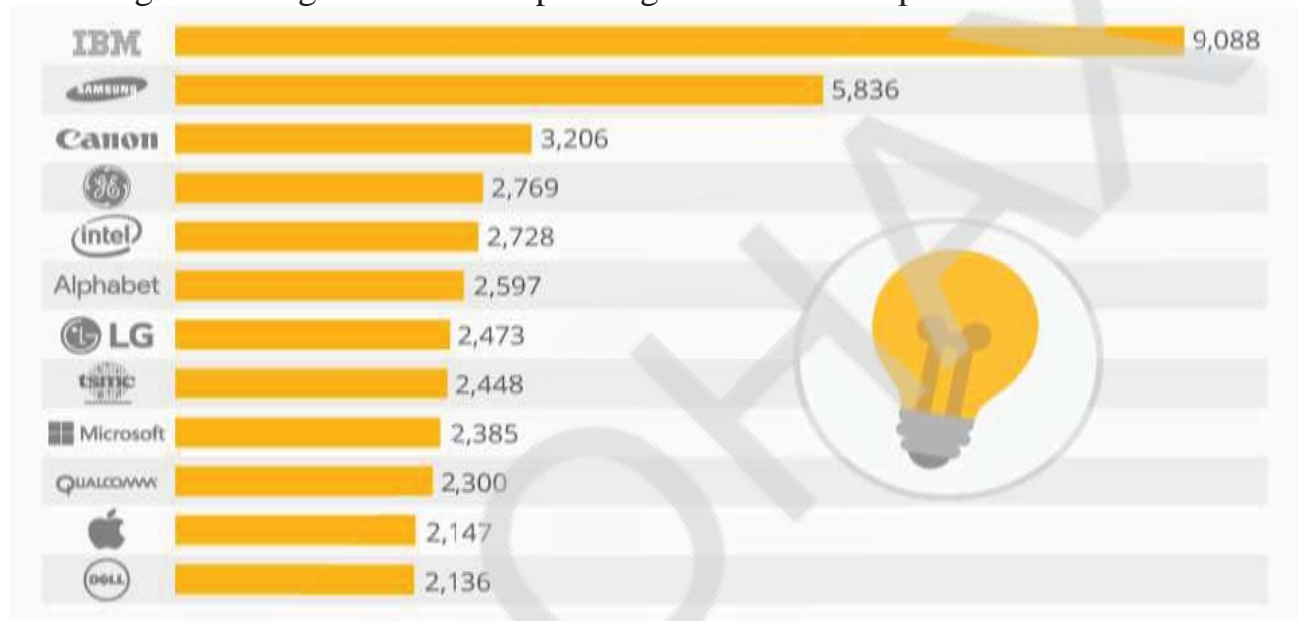


Fig. 6. The US companies granted the most patents in 2018

Source: statista. Available online at: <https://www.statista.com/chart/7642/top-10-patent-recipients-in-the-united-states/> [accessed on 24.01.2020]

The most popular companies granted the most patents in 2018 consist of IBM (9,088 patents), Samsung (5,836 patents) and Canon (3,206 patents). Apple is situated below in the top (position 11) with only 2,147 patents in 2018.

The intellectual property law in Romania has developed significantly in the period since the Romanian Revolution of 1989 because of the need to enforce various regional and international treaties and agreements, such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), the European Directives on Biotechnological Inventions, on Trademarks and Geographical Indications, and on Supplementary protection certificates, the Trademark Law Treaty, the Patent Law Treaty, and the European Union regulation on the Community Trademark, and the need to harmonize domestic patent law with the European Patent Convention (EPC) and with the European Union.

The changes since 1989 cover virtually every aspect of IP law in Romania, including copyright and industrial property, including such relatively new considerations as integrated circuit topographies. The State Office for Inventions and Trademarks protects industrial property, and the Romanian Copyright Office protects

copyright and related rights (The National Strategy in the field of intellectual property, 2003 – 2007).

As it is known, Romania has signed important treaties, conventions and agreements in the field of IP:

- Paris Convention for the Protection of Industrial Property—1920;
- Madrid Agreement Concerning the International Registration of Marks—1927;
- European Patent Convention (EPC)—1973
- Patent Cooperation Treaty—1978
- Hague Agreement Concerning the International Deposit of Industrial Designs—1992
- Protocol Relating to the Madrid Agreement—1998;
- Strasbourg, Nice, Vienna and Locarno Agreements on Classifications—1998
- Trademark Law Treaty—1998 and other.

For Romania it's possible to analyze the evolution of the intellectual property rights, presented in the figure 7.

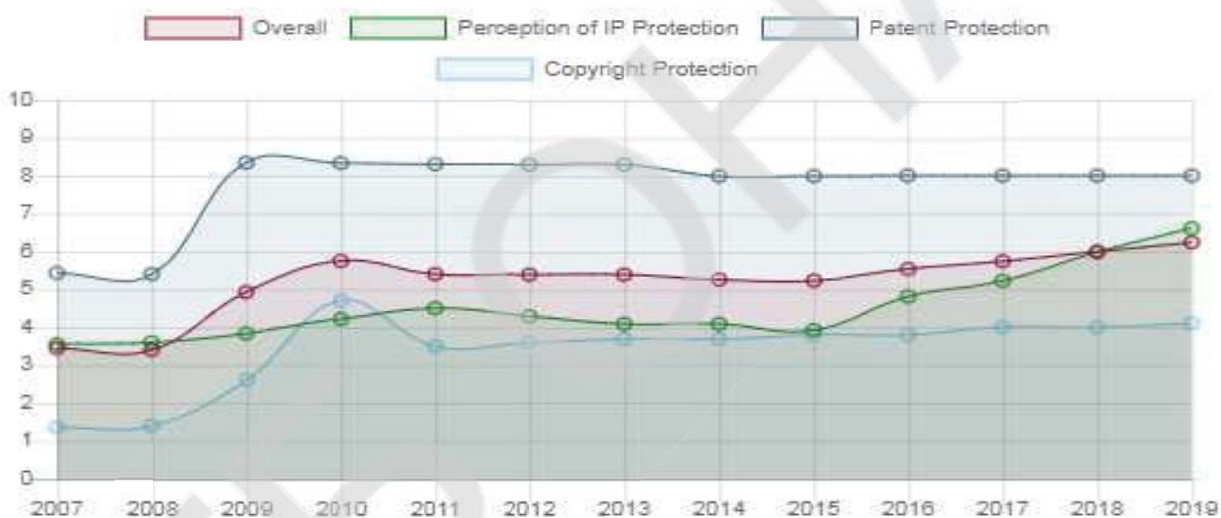


Fig. 7. Romania – the intellectual property rights, 2007 – 2019

Source: 2019 International Property Rights Index Romania. Available online at: <https://internationalpropertyrightsindex.org/country/romania> [accessed on 24.01.2020]

As a reference years serve 2018 and 2019, when patents reached the 8 level, without essential changes. About copyright, it reached the 4 level (in 2018) and 4.1 level (in 2019), with the difference with only 0.1 points. The statistics indicate optimistic results for the 2020 year.

The evolution of the IP in the Republic of Moldova

Republic of Moldova has a lot of companies, which apply innovations and bright ideas in all sectors of the economy.

The protection of intellectual property is important for promoting innovation, for creating new jobs and for competitive importance in economies. A requirement of the Deep and Comprehensive Free Trade Agreement (DCFTA) for the Republic of Moldova is to modernize intellectual property rights (IPR).

In the Republic of Moldova activates State Agency for the Intellectual Property, which has a few basic directions, illustrated in figure 8.

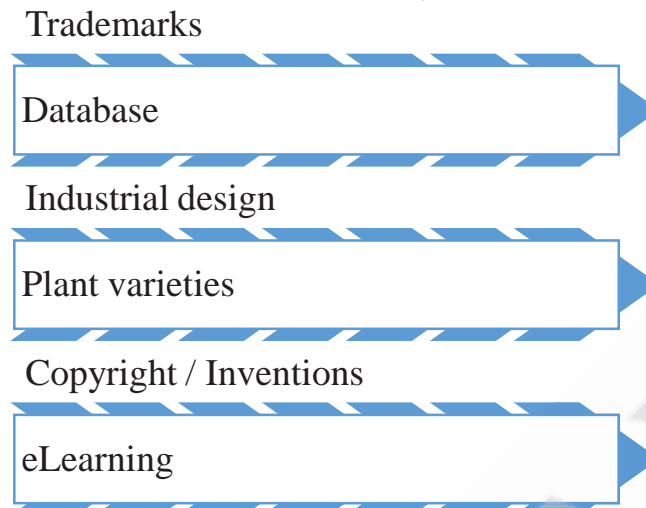


Fig. 8. Basic directions of the State Agency for the Intellectual Property

Source: Elaborated by the authors based on State Agency for the Intellectual Property data. Available online at: <http://www.agepi.md/ro/about> [accessed on 24.01.2020]

To conclude: the State Agency for Intellectual Property is a central administrative authority subordinated to the Government, responsible for promoting and carrying out activities in the field of legal protection of intellectual property regarding industrial property rights, copyright and related rights.

Every year, in the Chişinău takes place the international specialized exhibition "INFOINVENT", which offers the necessary framework for promoting the results of the work of researchers and inventors, as well as establishing partnerships for the implementation of innovations, new products and technologies.

The most relevant data about the IP of Moldova are from 2017. In the figure 9 is analyzed how are protected international property rights and on what places are situated comparative with other states, inclusive in relation with the neighboring country – Ukraine.

The International Property Rights Index consists of 10 factors, grouped under three components - legal and political environments, physical property rights and intellectual property rights. Each of the three components is rated on a scale from 0 to 10, where it is not possible for the result to be higher. According to The International Property Rights Index, the data in this ranking reveals that the Republic of Moldova is situated at the last place in Europe in terms of the protection of intellectual property rights. The Republic of Moldova obtained a score of 3,1781 points, the country registering the worst performances in the category of intellectual property rights. Ukraine is higher than Moldova, at the place 123.

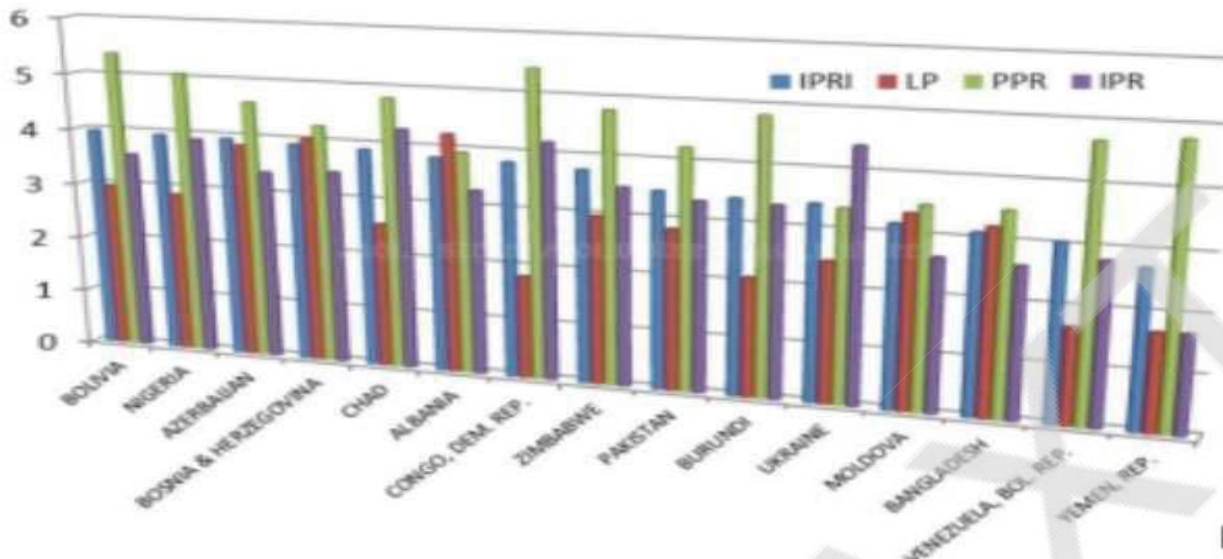


Fig. 9. International Property Rights Index (IPRI). Top 15 countries, 2017

Source: *Jurnal. md.* Available online at: <https://www.jurnal.md/ro/social/2017/7/14/moldova-codasa-europei-si-la-protectia-drepturilor-de-proprietate-intelectuala-mai-rau-e-doar-in-yemen-venezuela-si-bangladesh/> [accessed on 24.01.2020]

IP development in the Ukraine

In general, in Ukraine activates the State Department of Intellectual Property, founded in 1993. In 1995, Ukraine adhered to the Berne Convention. Ukraine is also a member of the International Convention for authors' copyright, and of the Madrid Agreement (registration of trademarks) and the Patent Co-operation Treaty. In an effort to improve enforcement of the protection of intellectual property rights, Ukraine agreed to an IPR Action Plan in 2010. Thus far, there has not been much progress. An advantage for Ukraine is that it is the member of WIPO (World Intellectual Property Organization).

In the figure 10 are illustrated the performance indicators in terms of the intellectual property registered by Ukraine in December 2019, published by the Ukrainian Intellectual Property Institute (Ukrpatent).

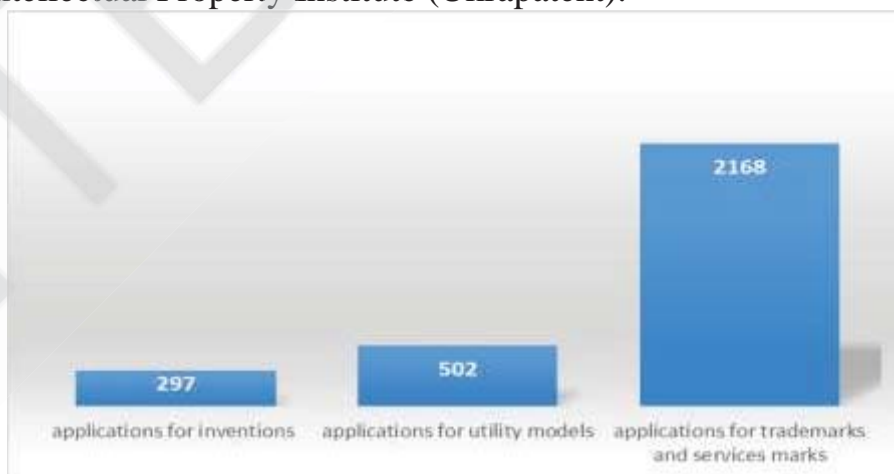


Fig. 10. Performances indicators of the Ukraine in terms of the IP, 2019

Source: *Elaborated by the authors based on Ukrainian Intellectual Property Institute data.* Available online at: <https://ukrpatent.org/en/news/main/december-2019-performance-13012020> [accessed on 29.01.2020]

According to the Ukrainian Intellectual Property Institute (Ukrapatent) in december 2019 was registered more applications for trademarks and services marks, almost 2168 and the least was for invention applications (297), generated mainly by new trends and changes that often occur in science and technology

Results

Results present general perceptions of the Moldovan citizens about IP. All results are represented in the figures (11, 12, 13).

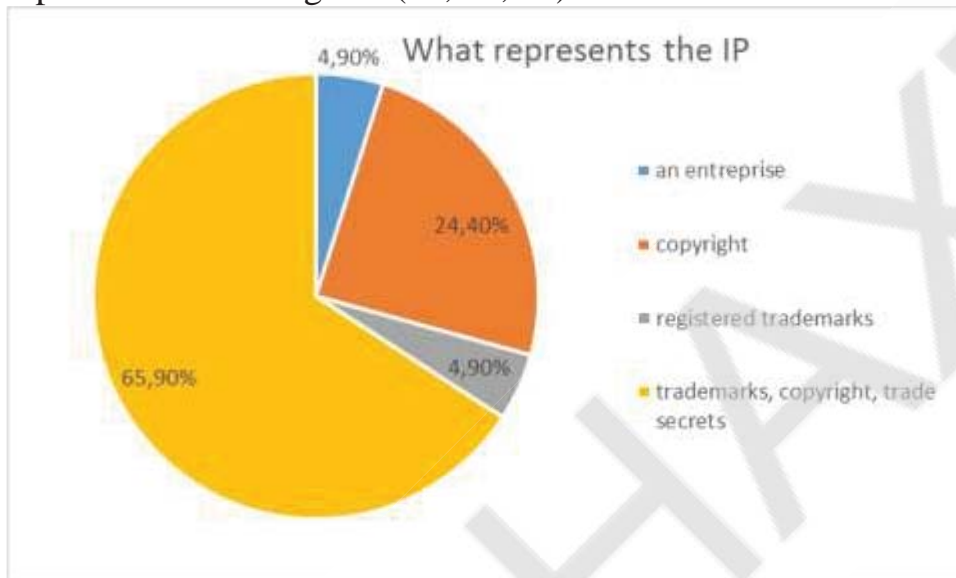


Fig. 11. Online questionnaire –what means the IP

Source: Online questionnaire – Intellectual property (Moldova)

Most of respondents from Republic of Moldova (almost 66 %) consider that intellectual property represents trademarks, copyrights, trade secrets, etc. taken together. And only 10 % consider that IP is an entreprise or registered trademarks.

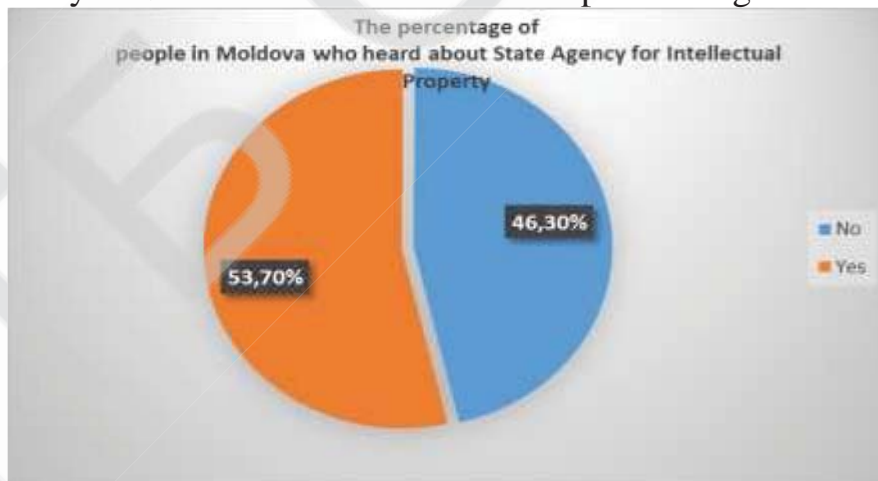


Fig. 12. Online questionnaire – the percentage of people who heard about State Agency.

Source: Online questionnaire – Intellectual property (Moldova)

As seen, the vast majority (53,70 %) heard about State Agency of Intellectual Property and which is the main activity of it. 46,30 % replied that they did know or heard about this institution, which means that it's necessary to promote intensely IP among the Moldovan citizens.



Fig. 13. Online questionnaire – the occupation of the respondents on questionnaire

Source: Online questionnaire – Intellectual property (Moldova)

The proportion of students who answered the questionnaire predominates (41,5 %). Most students know what means IP and heard about the State Agency of Intellectual Property, at least once they have tangents with it. According to the employees and pupils, the proportion is equal (22 and 22 %), probably intellectual property is increasingly discussed in the academic environment.

Conclusions and recommendations

It's important to know that the concepts of know – how, patent, copyright, trademarks, industrial design, trade secrets, entrepreneurship and innovation are included in the definition of intellectual property rights.

All the trends used in the IP talk about the development and growth of innovations, inventions, patents in each country mentioned. The world is advancing and big companies adapt to trends with amazing speed.

In terms of intellectual property, Republic of Moldova and Ukraine are situated almost at the same position in top 15 countries. This talk about future efforts that will be directed to IP development.

For the Republic of Moldova, it's advisable to be done the following efforts by the authorities to protect and promote the IP rights:

- ✚ improving the strategic and operational cooperation between various institutions responsible by the protection of intellectual property rights;
- ✚ elaboration of a strategy regarding the identification of local products that can obtain intellectual property titles and trainings for producers in the field of intellectual property;
- ✚ legislative harmonization in the field of intellectual property inspired by international practice.

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| | |
|--|------------|
| YOUTH ENTREPRENEURSHIP AS A MAJOR COMPONENT OF STATE DEVELOPMENT Author: Alina Shkvarko Supervisor: Lyudmila Davydyuk..... | 246 |
| TRADE NETWORK LOYALTY PROGRAMS: THEORETICAL BASIS AND METHODOLOGICAL ASPECTS OF EFFICIENCY ASSESSMENT Author: Olha Pakulenko Supervisor: Julia Brovkina..... | 254 |
| MARKETING ACTIVITIES OF THE UNIVERSITIES OF POLAND AND UKRAINE: CONDITIONS, METHODS, PROSPECTS Author: Hanna Holubonkova Supervisor: Dorota Simpson..... | 264 |
| FORMATION OF PERSONNEL POLICY OF THE CIVIL SERVICE SYSTEM Author: Mariia Klevets Supervisors: Kateryna Kozak, Kassianidis Panagiotis..... | 280 |
| DEVELOPMENT OF PROFESSIONAL COMPETENCE IN RESTAURANT SERVICE BASED ON THE USE OF WORLDSKILLS INTERNATIONAL STANDARDS Authors: Darya Yerafeyenka, Darya Shymanouskaya, Katsiaryna Repina Supervisor: Tatsiana Rybakova..... | 293 |
| THE IMPORTANCE OF THE INTELLECTUAL PROPERTY IN PROMOTING THE INNOVATIVE ENTREPRENEURSHIP Author: Ecaterina Brad Supervisor: Crudu Rodica..... | 299 |
| FEATURES OF SUSTAINABLE DEVELOPMENT STRATEGIES FOR UKRAINIAN AGRICULTURAL BUSINESS HOLDINGS Author: Anna Korikova Supervisor: Lyudmila Lobotskaya..... | 317 |
| 3. INFORMATION TECHNOLOGIES, AUTOMATION AND ROBOTICS | 324 |
| RESEARCH ON THE POSSIBILITY OF THE BEE COLONY ALGORITHM FOR DETERMINING THE TOPOLOGY OF THE WIRELESS NETWORK AT THE MARSHALLING YARD Author: Diana Nazarova Supervisor: Victoria Pakhomova..... | 325 |