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Ochrana duševného vlastníctva začínajúcimi podnikmi a možnosti jej podpory

Intellectual property protection by start-ups and ways to support it

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Abstrakt

Hlavným cieľom tejto štúdie je vyhodnotiť ochranu duševného vlastníctva v začínajúcich podnikoch na Slovensku a formulovať relevantné odporúčania pre hospodársku prax. K naplneniu hlavného cieľa slúžia parciálne ciele, a to zistiť povedomie o ochrane duševného vlastníctva a využívanie jednotlivých spôsobov jeho ochrany začínajúcimi podnikateľmi na Slovensku, zistiť problémy pri ochrane duševného vlastníctva a vyhodnotiť nástroje podpory jeho ochrany ako predpoklad pre úspešné prenikanie na zahraničné trhy, najmä trhy krajín V4, formulovať odporúčania na zlepšenie tejto podpory, ako aj odporúčania pre začínajúce podniky týkajúce sa duševného vlastníctva. Medzi použité metódy a postupy patria štruktúrovaný rozhovor ako metóda kvalitatívneho výskumu, analýza, syntéza a komparácia. Prínosom príspevku je návrh opatrení a odporúčaní, ktoré môžu zlepšiť zabezpečovanie ochrany duševného vlastníctva začínajúcim podnikom.

Kľúčové slová: duševné vlastníctvo, ochrana, start-up, podpora, zahraničné trhy

Abstract

The main objective of this study is to evaluate the protection of intellectual property in start-ups in Slovakia and to formulate relevant recommendations for economic practice. To fulfil the main objective, partial objectives are to investigate the awareness of intellectual property protection and the use of various forms of IP protection by start-ups in Slovakia, to identify problems in the protection of intellectual property and to evaluate the measures supporting its protection as a prerequisite for successful penetration of foreign markets, to formulate recommendations for improving this support, as well as recommendations for start-ups in the field of intellectual property protection. The methods used include structured interviews as a qualitative research method, analysis, synthesis, and comparison. The contribution of the paper is the proposal of measures and recommendations that can improve the protection of intellectual property by start-ups.

Keywords: Intellectual Property, Protection, Start-up, Support, Foreign Markets.

JEL Classification: A11, A12, E26.

Introduction

Intellectual property represents an integral part of the property of every company. In today's globalized world, it is essential for companies to secure intellectual property protection, both at the national, European and international level. Start-ups are inextricably linked to innovation, which can constitute intellectual property. Thanks to these innovations and intellectual property, they have a better potential to penetrate foreign markets. In terms of Slovak startups, these are mainly the markets of the Visegrad Group countries. However, proper protection may constitute a challenge or even a problem for start-ups due to the lack of knowledge, experience or finances. They therefore need available forms of support to ensure the protection of their intellectual property. First of all, it is beneficial for them if they have adequate knowledge and information at the very beginning of their business. Appropriate forms of intellectual property protection will also help them later when their business expands. Therefore, the research presented in this study focuses on whether start-ups have the necessary information, what is their awareness of the issue of intellectual property protection, what type of intellectual property they have, how they protect it and what are the benefits of this protection for them. In addition, the problems faced by start-ups in the field of intellectual property protection are the subject of this research. Identifying potential problems allows for the design of appropriate support tools, and thus facilitating the start of a business.

Based on the above, the main objective of this study is to evaluate the protection of intellectual property in start-ups in Slovakia and to formulate relevant recommendations for economic practice. On the basis of the main objective, the following partial objectives were set:

- to investigate the awareness of intellectual property protection and the use of individual forms of its protection by start-ups in Slovakia,
- identify problems with the protection of intellectual property and evaluate the tools of support for its protection as a prerequisite for successful penetration of foreign markets, especially the markets of the Visegrad Group countries,
- formulate recommendations to improve this support, as well as recommendations for start-ups concerning intellectual property protection.

1 Theoretical background

Intellectual property includes the results of human creative activity that are perceptible to the senses and provide some added value such as inventions and technical solutions, literary or artistic works, designs, logos, symbols or names used by companies (Kropaj, 2019).

Intellectual property is legally protected by copyright and industrial property rights, such as patents, utility models, designs or trademarks. These rights allow individuals or businesses to gain recognition as well as financial benefit from what they have invented or created. The IP protection system aims to strike the right balance between the interests of creators and the wider public interest in order to foster an environment in which creativity and innovation can flourish (WIPO, 2024).

In commercial practice, the protection of intellectual property is considered to be an important element that provides businesses with protection against the misuse of their creations and contributes to the creation or preservation of a good reputation. It provides businesses with the exclusive right to use their protected intangible assets. It also provides opportunity to obtain the funds necessary for the development of an innovated product (European Commission, 2024).

In today's globalized world, it is common practice for many businesses to protect their intellectual property not only domestically, but also internationally, as they operate on foreign markets. Before entering a national or foreign market, it is essential to consider the appropriate form of intellectual property protection, such as a patent, trademark, know-how, or design. Adequate protection of intellectual property is an important factor in business expansion in both domestic and foreign markets.

Inadequate intellectual property protection is associated with several risks, such as loss of business opportunities, income, reputation or competitive advantage (InnoNews.blog, 2024).

There are several options for protecting intellectual property abroad. In principle, one of the following ways can be used to obtain protection abroad. The first way is to obtain protection through national offices, i.e. by filing an application directly in the country in which the company wishes to benefit from protection.

In this case, the law of the selected country applies. The second is to obtain protection in several countries under the relevant international conventions by filing a single application with WIPO. The third option is to obtain regional protection within the EU or several European countries, which is a method frequently used by businesses in Slovakia, especially in the case of trademarks. National trademarks are used when a company only needs legal protection on the domestic market or on few foreign markets. EU trade marks offer applicants an easy way to obtain comprehensive protection in all EU countries, for a period of ten years. The period of protection can always be extended for another 10 years indefinitely.

2 Materials and methods

In order to evaluate the protection of intellectual property in start-ups in Slovakia and to formulate relevant recommendations for economic practice, we conducted original research.

The first step was to determine the research sample. The selected research sample included start-ups that were dealing with the issue of intellectual property at the very beginning of their business activities. The research sample consisted of a total of six start-ups with different fields of activity. These are shown in Table 1.

Table 1: Business field of start-ups

Respondent	Business Area
A	Healthy eating
B	Virtual, Mixed, and Augmented Reality Simulation
C	Holographic imaging and projectors
D	Mobile application for accommodation of students
E	System for monitoring and predicting energy flows in industry
F	Rental and leasing of recreational and sports equipment

Source: own research, 2024.

An important criterion for including the company into the sample was precisely the fact that it is a start-up. In the research sample, start-ups were associated within the incubators of Slovak universities. One of them was the technology incubator of the Slovak University of Technology (SUT) in Bratislava InQb. The mission of the InQb technology incubator is to support SUT students and graduates in developing their business ideas through the START and UP incubation programs. In addition, they are also involved in organizing educational activities and building a community that is focused on innovation and entrepreneurship (InQb, 2024). Another incubators were the Startup Center and the TUKE Incubator of the TECHNICAL University Science Park of the Technical University of Košice, whose goal is to support the creation of business incubators for small and medium-sized "Hi-Tech" companies, Start-ups and "Spin-off" companies, generated mainly on the basis of relevant outputs of research and development, carried out within the research and innovation activities and projects of universities and institutes of the Slovak academy of Sciences (UVP Technicom, 2024).

The next step of this research was to formulate questions used to obtain primary data. We obtained primary data through structured interviews with start-ups, asking a total of 13 open-ended questions (see Table 2).

Table 2: Structured interview questions

Order	Question
1.	What is your understanding of the concept of intellectual property?
2.	Do you know the tools for protecting intellectual property? If so, please specify which ones.
3.	Do you have intellectual property that needs to be protected?
4.	What is your type of business? (start-up or business established on the market, size of the business, etc.)
5.	Do you operate on foreign markets?
6.	What forms of intellectual property protection do you currently use?
7.	Do you currently use any forms of intellectual property protection abroad?
8.	Is the intellectual property protection important in your business?
9.	What forms of support for intellectual property protection were you familiar with at the time of starting your business and what forms do you currently know?
10.	What specific forms of support for intellectual property protection have you used? If you haven't used any, why?
11.	What problems did you encounter in the early days of your business?
12.	What do you lack in the support provided in Slovakia, what would you need, but no one offers it?
13.	What would you recommend to start-ups in the field of intellectual property protection?

Source: own research, 2024.

The structured interviews took place between 15/04/2024 and 20/04/2024, with an average duration of 15 minutes. According to the overview of the use of structured or expert interviews in the scientific literature by S. Krivosudská (2022), the interview as a qualitative research method allowing researchers to obtain information and knowledge about "what?", "how?" and especially "why?". Interviews are often time-consuming, therefore the size of the research sample is usually limited. According to M. Saunders et al. (2016), the minimum number of respondents is five and the maximum is 25. However, due to the limited size of the research sample and the associated controversy over the representativeness of the findings, the literature in this area is inconsistent (Creswell and Poth, 2018). In structured interviews, respondents are usually provided with anonymity, which allows the sharing of information of a confidential nature. This can help to obtain additional, sometimes even key research findings. Table 3 provides an overview of studies from journals indexed in the Web of Science and Scopus databases according to Krivosudská (2022), in which qualitative research methods were used, including their main characteristic. Based on this literature, we accepted the size of our research sample and proceeded to anonymize the responses of the respondents. Subsequently, we evaluated and interpreted the data obtained.

Table 3: Overview of the scientific literature using interview as a research method

Authors	Research area	Sample size	Respondents	Anonymity of respondents
van Baal – Finger (2019)	Energy	13	Public officials, diplomats, entrepreneurs	yes
Aláez-Aller – Erro Garcés (2006)	Automotive	33	Representatives of companies	not
Aschemann-Witzel et al. (2015)	Sustainability	11	Experts	partially
Bogdanova et al. (2017)	Energy	8	Experts	not
Kowalski et al. (2021)	Blockchain	7	Experts	yes
Lai – Zhang (2013)	International trade	31	Government officials, businessmen, representatives of the civil society, companies, media	yes
Maksum et al. (2020)	Small and medium-sized enterprises	50	Business owners	yes
McKenna et al. (2016)	Wind industry	7	Experts	not
Payne-Gifford et al. (2022)	Meat processing	11	Experts	yes
Rombach et al. (2018)	Food poverty	12	Managers, volunteers of the food bank	yes
Roscoe et al. (2020)	Pharmaceutical industry	27	Company managers and experts	yes
Urciuoli et al. (2014)	Energy	5	Company managers	yes
Wang et al. (2019)	Blockchain	14	Experts	yes

Source: Krivosudská, 2022.

To meet the objective of this study, we used several scientific methods and procedures. We carried out both qualitative and quantitative analysis of the data obtained through the structured interviews. When evaluating the data obtained, we used comparison and synthesis.

3 Results and discussion

First of all, we identified what respondents understand by the term intellectual property and what forms of its protection they are familiar with. The purpose was to assess the knowledge of start-up entrepreneurs about intellectual property. The majority of respondents agreed that intellectual property is something intangible that can be owned and is associated with exclusive rights. All major types of intellectual property were mentioned as examples. The most frequently cited form of protection was a trademark and a patent, which are known to 83% of respondents. An overview of the percentage of all listed forms of protection is provided in Table 4. An interesting answer was that the concept of intellectual property is associated with a lot of bureaucracy. It is clear from the answers that start-ups are familiar with the concept of intellectual property and the forms of its protection.

Table 4: Known forms of intellectual property protection

Form of protection	Share of respondents who indicated this form of protection
1. - 2. Trademark	83 %
1. - 2. Patent	83 %
3. Business name	50 %
4. – 6. EU trade mark	33 %
4. – 6. Copyright	33 %
4. – 6. Non-registered trade mark	33 %
7. Domain	17 %
8. Utility model	17 %

Source: own research, 2024.

For research purposes, the question of whether respondents have intellectual property that needs to be protected is important. Half of the respondents answered that they do not have intellectual property that needs to be protected. However, asking additional questions, we found out that they have at least a name, or some even designed their own logo. The remaining respondents listed computer code, name and brand as their intellectual property. This finding shows that start-ups often don't even realise that what they have is intellectual property that needs to be protected. Respondents' theoretical knowledge of intellectual property is therefore not always accompanied by its practical understanding or the ability to apply it in a specific start-up.

We further investigated what forms of IP protection are used by start-ups involved in research. It can be concluded that the trade mark predominates, whether in the form of a national trade mark or an EU trade mark (see Table 5 for more details). Half of the respondents do not use any registered form of protection, but in one case they protect their brand by promoting it on various social media. A name, brand or logo are essential elements that every business must have to differentiate itself from the competition. This is precisely the reason for protection in the form of a trademark. It is an important step right at the beginning of a business. If a business

underestimates this, it may lose the competitive advantage and reputation it is working for. Even in Slovakia, there are groups or individuals who steal corporate identities (Miškerík, 2024). The so-called trademark pirates register the name of an existing company not protected by a trademark for the activities that this company performs. They then ask social media as owners of the registered trademark to cancel the activities of the company as infringing the rights of the trademark owner. Proving the infringement and the enforceability of rights are difficult in this case.

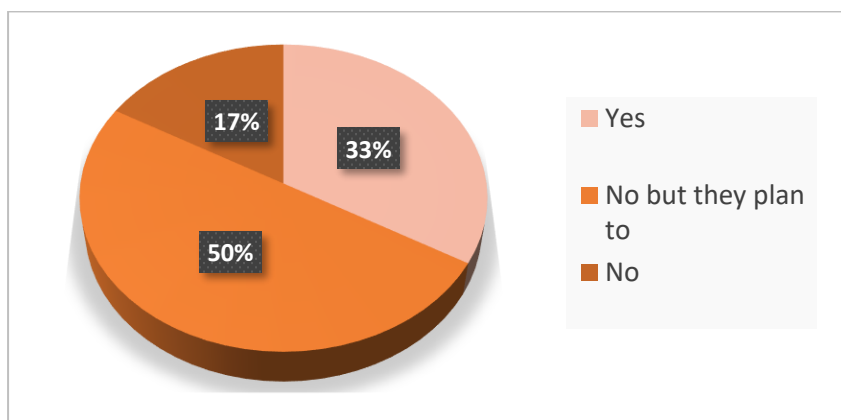
Table 5: Forms of protection used by start-ups

Form of protection	Share of respondents who indicated this form of protection
Any	50 %
Trademark	33 %
EU trade mark	17 %
Non-registered trade mark	17 %
Business name	17 %
Trade secret	17 %

Source: own research, 2024.

The local market may seem insufficient even to start-ups. In a globalized world, it is often necessary to expand business to foreign markets. That is why we examined whether start-ups operate abroad and, if so, whether they benefit from any form of intellectual property protection abroad. It is important for companies to have the intellectual property already protected when entering foreign markets, as this increases competition and potential threats. According to our findings, a third of the start-ups involved in the research are active in foreign markets (Chart 1). However, all but one of those that do not do so are planning to expand to foreign markets in the near future, especially to the markets of the neighboring countries of the Visegrad Group such as the Czech Republic, Hungary and Poland. Businesses that already protect their IP abroad benefit from the EU trade mark and the protection of web domains.

Chart 1: Start-ups operating abroad



Source: own research, 2024.

As the issue of intellectual property and its protection is increasingly discussed, we investigated how important intellectual property protection is when starting a business. All respondents consider the protection of intellectual property to be important or even very important for business. However, it is clear from the answers that, in some cases, this is not the case from the very beginning, that is to say, at the time when the IP was created. Awareness of IP protection importance only came with time, either after acquiring sufficient knowledge through training or after being recommended by lawyers and potential investors. The fact that the company had already established a good reputation in the market also played a key role. Failure to ensure protection could be fatal to the business. The importance of protecting intellectual property also increases with strong competition in the market (which is also the case when entering foreign markets) or in the case of business that is financially intensive in the field of research and development.

Next, we focused on what problems related to the protection of intellectual property accompanied respondents at the beginning of their business. Identifying potential problems allows for the creation of appropriate support tools, and thus facilitating the beginnings of a business. Only one respondent chose the strategy of leaving the entire IP protection issue to a lawyer who is a specialist. Of course, this approach requires additional financial resources, that are not available to every startup, but at the same time it reduces potential risks and helps to avoid future problems. Those start-ups that have secured IP protection on their own consider the administrative and time burden to be a problem (which in the case of start-ups can mean less resources for other areas of business). Experience of another entrepreneur was that he was aware of his intellectual property, but he did not have a clear idea of how to protect it. Another serious problem was that the start-up presented the prototype before a patent application was filled. However, once the invention is made available to the public, it is no longer possible to patent it, and it is irrelevant who published the invention. By acting unknowingly, start-ups can thus deprive themselves of a unique chance to obtain exclusive rights to produce or trade in products that are protected by a patent.

The following questions allowed us to find out what is the awareness of the existing support for the protection of intellectual property. Thus, we mapped the respondents' overview of who they should contact if they have intellectual property and want to protect it properly. For example, where they can obtain information that would help them choose the appropriate form of intellectual property protection. We were also interested in whether any of the available forms of support were used by start-ups, if so, which ones. Due to the fact that the respondents were startups that were formed in incubators of Slovak universities providing support in various areas of business, all respondents had knowledge of the support provided by incubators also in the field of intellectual property protection. Other institutions providing support include the Slovak Centre of Scientific and Technical Information, which closely cooperates with incubators of Slovak universities in the field of intellectual property protection, the Slovak Business Agency, the Slovak Innovation and Energy Agency, the Patent Office, and even other Slovak universities where the respondents studies, such as the University of Economics in Bratislava and Comenius University. Among

the forms of support used, respondents included attending various seminars, webinars, mentoring, assistance in drafting contracts, especially licensing agreements, obtaining a grant for the registration of a trademark and an EU trademark, which start-ups consider quite financially demanding.

In the next part, we examined whether the respondents lacked something they needed as part of the support provided, but no one offered it to them. Half of the respondents involved in the research said that they were provided with sufficient support, had all the necessary information, and had contacts to specific experts willing to help in this field. Other respondents responded by making suggestions based on perceived gaps in support, mainly of an informational nature. Therefore, they recommended creating a uniform and comprehensive website where start-ups could find:

- information on what constitutes intellectual property, what are the possibilities of its protection,
- an overview of the necessary administrative steps, i.e. what workload startups should expect,
- costs of individual forms of intellectual property protection,
- templates of intellectual property contracts that may be necessary in the course of business.

In order to capitalize on the experience gained by start-up entrepreneurs, we asked them about recommendations in the field of intellectual property protection for future generations of startups. The answers were comprehensive and varied. First of all, it was recommended to start-ups to pay sufficient attention to this issue right from the start of the business, to educate themselves in this area, or to seek the help of expert who will explain the necessary steps and procedure. Artificial intelligence can also help, as it can provide information for at least basic awareness of the issue. The future success of start-ups also depends on how well they know their competition. Therefore, they need to pay sufficient attention to analysing competitors before launching a product or service, including whether the marketing of the product will infringe the rights of another entity that owns the intellectual property. Furthermore, it is important to ensure the protection of trade secrets, not unnecessarily disclosing them to outsiders who could misuse them. It is also a good idea to set up a business profile on social networks.

Conclusion

The intellectual property protection in business is a key sphere that should not be underestimated by start-up entrepreneurs. Our research in this area has revealed a number of findings.

Start-up entrepreneurs have at least theoretical knowledge of intellectual property. They can define what the concept of intellectual property represents, and they also have a basic awareness of what are the possibilities of its protection. However, theoretical knowledge is not always accompanied by the ability

to apply it in practice. Some start-up entrepreneurs are already using some form of intellectual property protection, most often it is a trademark. In the case of operating on foreign markets, it is the EU trade mark.

One of the problems that start-ups face when protecting intellectual property is the financial resources needed to ensure the protection. When starting a business, it is also necessary to invest in other areas of business that may be perceived as more important than the protection of intellectual property. However, this problem can be solved thanks to the grants that are provided by the European Union. In particular, the "Ideas Powered for Business" grant scheme for EU-based SMEs can be used. Under the scheme, vouchers can be obtained to pay up to 75% of the filing fees for trade marks, designs, patents and plant varieties, as well as the IP scan fee of up to 90% of the amount (EUIPO, 2024).

We therefore consider it necessary to raise awareness of such possibilities. Another problem in securing IP protection by start-ups is the related administrative burden.

Regarding assistance and different forms of support in securing IP protection for start-ups, those respondents who have used the services offered by incubators perceive this support as sufficient. Various workshops and lectures, or personal mentors who accompany start-up entrepreneurs during the process of intellectual property protection are considered beneficial.

To facilitate the provision of IP protection by start-ups, the creation of a comprehensive website concentrating all relevant information, administrative procedures, fees or model contracts relating to IP is recommended. It would also be appropriate to reduce the administrative burden in the process of IP protection. Raising awareness of existing forms of support for start-ups in the field of intellectual property is also important.

Based on the experience of start-ups in the field of IP protection, the most important recommendations for start-ups are not to underestimate or neglect IP protection at the very beginning of the business and to take advantage of the available training opportunities in this field as well as other forms of support. If the company has sufficient financial resources, it is recommended to use the services of IP protection experts. We believe that the implementation of the above recommendations will improve and simplify the protection of intellectual property by start-ups.

This study can be used as a pilot study for the design of a broader research involving not only start-ups, but also enterprises that are already established on the market, either on the national or on the European market, with a particular focus on micro, small or medium-sized enterprises.

Resume

The intellectual property protection is one of a key areas that should not be underestimated by start-ups. Our research based on structured interviews with start-ups in Slovakia has revealed a number of findings. Start-up entrepreneurs have at least a theoretical knowledge of intellectual property. They know what intellectual property

is and also have a basic understanding of the possibilities to protect it. However, theoretical knowledge is not always accompanied by the ability to apply it in real business. Some start-ups are already using some form of IP protection, most often a trademark. In the case of operating in foreign markets, it is the EU trademark. One of the problems that accompany start-ups in the field of intellectual property is the financial resources needed to ensure the IP protection. When starting a business, it is also necessary to invest in other areas of the business that may be perceived as more important than IP protection. However, this problem can be addressed through grants provided by the European Union. Another problem in securing intellectual property protection is the administrative burden for start-ups. Regarding assistance and different forms of support for start-ups in securing IP protection, those respondents who have used the services offered by incubators perceive this support as sufficient. Various workshops and lectures, or personal mentors who accompany start-up entrepreneurs during the process of intellectual property protection are considered beneficial. To facilitate the provision of IP protection by start-ups, the creation of a comprehensive website concentrating all relevant information, administrative procedures, fees or model contracts relating to IP is recommended. It would also be appropriate to reduce the administrative burden in the process of IP protection. Raising awareness of existing forms of support for start-ups in the field of intellectual property is also important. Based on the experience of start-ups in the field of IP protection, the most important recommendations for start-ups are not to underestimate or neglect IP protection at the very beginning of the business and to take advantage of the available training opportunities in this field as well as other forms of support. If the company has sufficient financial resources, it is recommended to use the services of IP protection experts.

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