

LAW ASPECTS OF THE INDUSTRIAL PROPERTY MANAGEMENT

DOI: 10.2478/czoto-2024-0041

Received: 08/12/2024

Accepted: 23/12/2024

Renata Stasiak-Betlejewska¹ – *orcid id: 0000-0001-8713-237*

e-mail: renata.stasiak-betlejewska@wz.pcz.pl

Oliwia Betlejewska² – *orcid id: 0009-0007-2624-2832, e-mail: magdaoliwia2004@gmail.com*

¹Częstochowa University of Technology, **Poland**

²University of Gdańsk, **Poland**

Abstract: Industrial property rights are exclusive rights that provide a monopoly on the use of specific goods, resulting from national, regional or international regulations. Industrial property can be protected by: patents granted for inventions. protection rights for utility models. Industrial property objects of enterprises protected by law are following: inventions, utility models, industrial designs, trademarks, geographical indications and topographies of integrated circuits. Authors presents legal solutions and case studies on selected enterprises presenting the issues of industrial property rights protection. Paper contains also analysis of statistical data on industrial property application procedures and recommendations for enterprises that concern industrial property safety management related to conditions of industry 4.0.

Keywords: industry, industrial property, management, patents, trademarks

1. INTRODUCTION

In today's world, markets offer so many goods and services that all companies, both large and small, face numerous challenges in their operations. In the constant race against competition, each company strives to create new and improved products (goods and services) that will provide users and customers with higher value than the products offered by competitors. In order to give their products a unique character, which is today a necessary condition for achieving market success, companies resort to innovations that reduce production costs and/or improve the quality of products.

In today's knowledge-oriented and private-sector-oriented economic growth paradigm, various types of intangible assets of a company are often more important and valuable than its tangible assets. A key part of intangible assets is protected by a set of rights known collectively as intellectual property rights. They provide protection for trade secrets, copyrights, utility models and trademarks, patents and other rights. Intellectual property rights transform the products of human intellect into marketable goods and provide a wide range of tools that enable companies to achieve success through innovative business models (PARP, 2012).



According to Polish regulation (Ustawa Prawo własności przemysłowej, 2000) intellectual property is a collective concept that includes the so-called rights to intangible assets. Rights to intangible assets are exclusive rights to the products of the human mind. Such products in the field of art can be literary works, musical works, etc. In the field of technology – inventions, utility models, industrial designs, topographies of integrated circuits. Finally, in the field of individualization of the entrepreneur – trademarks or the right to a company name. The right to a database or the right to know-how are also considered intellectual property rights. Rights to intangible assets include industrial property rights and copyright and related rights. Additionally, this catalogue includes personal rights to the extent that they concern the use of personal property for the purpose of individualization, advertising or promotion of the entrepreneur, goods or services. Finally, rights to intangible assets also include personal rights related to scientific and inventive activities. Industrial property rights provide companies with (Stryzhak, 2020, Derevyanko, 2020):

- the basis for preventing third parties from duplicating their products and using their innovations, which is particularly important in the face of market competition;
- the possibility of creating a strong brand identity by distinguishing the product through the strategic use of one or more types of intellectual property rights;
- the opportunity to obtain valuable market intelligence information, important for building a competitive advantage. Such analysis of commercial and technological information contained in databases on patents, trademarks and utility models can broaden the company's knowledge of various technological areas and trends; help define future research and development directions and identify current competition, which will save time and resources necessary for research, development and marketing;
- the opportunity to increase one's market value;
- the opportunity to gain access to new markets;
- the opportunity to engage in various types of business partnerships - intellectual property rights create the basis for entering into partnership and cooperation agreements, e.g. in the field of research, marketing, open innovation, outsourcing and others;
- the guarantee of freedom of action - owning or licensing key intellectual property rights reduces the risk of a company infringing on the property rights of others in connection with the use of technology, trademarks, utility models and copyrighted works; and
- the possibility of geographical segmentation of markets – in some countries, intellectual property owners may not allow their goods protected by intellectual property rights, introduced to the market in a given country or region, to be exported to another country where these goods are also subject to intellectual property rights protection.

The broad application of the term “industrial property” is set out in the Paris Convention. Paris Convention for the Protection of Industrial Property (1883) (Paris Convention) and the Berne Convention for the Protection of Literary and Artistic Works (1886) (Berne Convention). These treaties are administered by World Intellectual Property Organization (WIPO). In some cases, aspects of an intellectual creation, although present, are less clearly defined. Countries generally have laws to protect IP for two main reasons (WIPO 2016):

- to give statutory expression to the rights of creators and innovators in their creations and innovations, balanced against the public interest in accessing creations and innovations;

- to promote creativity and innovation, so contributing to economic and social development.

Industrial property management consists in the protection and effective use of intangible assets, such as inventions, utility models, trademarks or industrial designs. In Poland, these issues are regulated primarily by the Act of 30 June 2000 - Industrial Property Law, as well as international acts such as the Paris Convention or the TRIPS Agreement (Moś and Maciejewski 2024).

The main purpose of intellectual property law is to encourage the creation of a wide variety of intellectual goods. To achieve this, the law gives people and businesses property rights to the information and intellectual goods they create, usually for a limited period of time (Dhokare and Gaikwad 2020).

Today, the intellectual property rights system is crucial to the economic growth strategies of countries at all stages of development. Such a system encourages innovation and the creation of an atmosphere of trust, which are fundamental factors in creating better goods and services for consumers and users (He, 2020).

The safety of the industrial property management in Industry 4.0 requires a multifaceted approach that integrates technological innovation with stringent safety protocols. By addressing cybersecurity, physical safety, and data integrity concerns, organizations can leverage Industry 4.0 technologies to enhance operational efficiency while minimizing risks.

The appearance of Industry 4.0 has revolutionized industrial property management by integrating advanced technologies like the Internet of Things (IoT), Artificial Intelligence (AI), Big Data, and Blockchain. These innovations offer unparalleled opportunities for efficiency, productivity, and connectivity but also introduce new challenges and risks, particularly concerning safety and security. Addressing these risks is crucial to protect physical assets, intellectual property, and operational continuity in an increasingly interconnected industrial environment.

Key Safety problems that concerns industrial property management are following (Malik, 2021, Pivoto, 2021):

1. Cybersecurity threats. As Industry 4.0 relies on interconnected systems, the risk of cyberattacks on industrial facilities increases. Industrial property management systems, often connected to cloud platforms or IoT devices, can be vulnerable to data breaches, ransomware, and other malicious activities. Securing these systems requires robust encryption, regular security updates, and strong access controls.
2. Data Integrity and confidentiality. The management of industrial property often involves sensitive data, including blueprints, patents, and proprietary technologies. The risk of unauthorized access or data tampering can have far-reaching consequences, including financial losses, operational disruptions, and reputational damage.
3. Physical safety risks. The automation and digitization of industrial processes reduce human intervention but also pose safety risks if systems fail. A compromised industrial property management system could lead to equipment malfunctions, environmental hazards, or workplace injuries.
4. IoT vulnerabilities. IoT devices play a critical role in modern industrial property management, enabling real-time monitoring and predictive maintenance.

However, these devices are potential entry points for cyberattacks. Ensuring their security is paramount to preventing unauthorized access to critical infrastructure. The main goal of the paper is analysis of legal solutions on the industrial property safety management that is based on the case study of selected enterprises. Paper contains also statistical data on industrial property application procedures and recommendations for companies that concern the safety management within industrial property related to conditions of industry 4.0.

2. OBJECTS OF THE INDUSTRIAL PROPERTY PROTECTION

The Industrial Property Law regulates aspects such as the creation and use of inventions, utility models, industrial designs, trademarks, geographical indications, integrated circuit topographies and rationalization projects. Industrial property rights are:

- the right to a patent for an invention,
- the right of protection for a utility model,
- the right from registration of an industrial design. Industrial property also includes
- the right of protection for a trademark,
- the right from registration of geographical indications and
- the right from registration of the topography of an integrated circuit.

The concepts of intellectual property and industrial property are often confused. It should be remembered that intellectual property is a broader category, collectively covering all rights to intangible assets. It is therefore a general category, superior to industrial property. Intellectual property therefore includes industrial property, but also copyright protection (together with related rights), protection of databases or protection against unfair competition and monopolistic practices. It can therefore be said that industrial property is a subcategory of intellectual property.

Despite existing legal regulations, industrial property rights were and still are considered by Polish entrepreneurs to be secondary issues. It should be emphasized that in the new economic model based on innovation, new technologies and the creation of new markets, intellectual property rights, and especially industrial property, are beginning to play a significant role and often decide about success or failure in business. In everyday language, "patenting" is often understood as obtaining any exclusive right, on the basis of which third parties can be prohibited from using a given product, product or sign. Such an understanding is incorrect, because only an invention can be patented in the legal sense. This is done by obtaining an administrative decision called a patent for the invention. The invention itself has not been defined in the law. It is assumed that it is a technical solution to a given problem/issue, regardless of the field, which is the result of human intellectual work (PARP 2016).

Authors analyse below main aspects of legal solutions that concern industrial designs, trademarks and patents that result from law regulations and courts' statements.

2.1. Industrial design

In addition to inventions, legal regulations allow for the protection of an industrial design. In practice, in relation to industrial designs, one can encounter terms such as "design" and "applied art", which are synonyms of the term industrial design. Industrial design has recently experienced a real renaissance in Poland, and for this reason the role of the exclusive rights discussed here is constantly growing. Manufacturers increasingly employ renowned designers, as Polish recipients and consumers increasingly pay attention to the

attractive appearance of the products they purchase. While in the case of an invention one can apply for a patent, in the case of industrial designs, protection is realized by obtaining the so-called right to register an industrial design. It is the equivalent of a patent in industrial design law, but it is worth not confusing these concepts.

An industrial design, unlike an invention, does not protect a technical solution or the method of construction and operation of a given product/product. An industrial design concerns its external form. It is therefore about the visually perceptible appearance of the product – its visual representation. The right from the registration of the design will therefore cover such features of the product as: lines (geometric shapes), contours, shapes, colours, structure, material, ornamentation, etc. In order to obtain protection for an industrial design, it must meet the following requirements:

- be new – novelty occurs when an identical design has not been previously made publicly available (e.g. by exhibiting at a trade fair); a design made publicly available is one that could have reached the knowledge of people professionally involved in a given field; similarly to inventions, this concerns novelty on a global scale; a design that differs only in insignificant details is also considered identical;
- have an individual character – a design is characterized by an individual character if the overall impression it makes on a so-called informed user differs from the impression made on him by a design previously made publicly available; therefore, it concerns a kind of general impression, and not, for example, a specific number of details that differ between the compared designs;
- an informed user is a person who uses a given product and has a good understanding of the subject (he is placed somewhere between an expert and an ordinary consumer); when assessing this premise, which is clearly very subjective, the scope of the designer's creative freedom is taken into account (generally, the greater the creative freedom, the more the designs must differ from each other).

The right from registration of a design gives the entitled person the exclusive right to use it in trade. The entitled person of the design may therefore object if a third party uses it.

Design protection guarantees you the exclusive right to use a design, which includes making, offering, putting on the market, importing, exporting or using the product in which your design is incorporated or to which it is applied. If the other business unit get author permission in the form of authorization, third parties can use your design in their products. The registration of a design shall confer on its holder the exclusive right to use it and to prevent any third party not having his consent from using it (EU Directive 1998).

An unregistered community design is established merely by the disclosure of a design and triggers protection for three years from the date of disclosure. This informal right was created to satisfy the demands of the industry and creatives for a design protection right providing broad-ranging territorial protection and safety for short-lived products without an elaborate and costly registration procedure. Regulation on Community Designs No 6/2002 ("CDR") generally provides for two categories of unitary titles: the "registered community design" and the "unregistered community design". A design as registered or unregistered generally protects the appearance of the whole or a part of a product resulting from the features of, in particular, the lines, contours, colours, shape, texture and/or materials of the product itself and/or its ornamentation (Article 3(a) CDR). Recitals 16 and 25 of the CDR suggest that by establishing the unitary title which the unregistered community design constitutes, the EU legislature intended, with the aim of encouraging innovation, to protect designs applied to or incorporated in products with a short market life whose

designers wish to obtain rapid and efficient protection without the burden of registration formalities and where the duration of protection is less important. The substantive conditions for obtaining protection are the same for both registered and unregistered designs: in essence, a design must be "new" and have an "individual character" (Article 4(1) CDR). A design, whether registered or unregistered, is deemed to be "new" if no identical design has been made available to the public before the date on which the design was first made available to the public (Article 5(1)(a) CDR). Designs are considered identical if their features differ only in immaterial details (Article 5(2) CDR). Novelty is to be examined by means of an individual comparison with already existing designs. A mosaic-like comparison, i.e. the comparison of individual features with other designs, is not admissible (Kapeller-Hirsch 2021, OGH 4 Ob 193/22v 2022).

At the core of the right to ownership of a registered design is the fundamental principle of entitlement derived from creation of the design. Ultimately, entitlement flows from the person who created the design, but may reside for example with their employer. An issue that often arises is who the actual designer is, particularly where there has been collaboration in the creative process, as illustrated by the recent decision issued by the Australian Designs Office in *Jarvie v Comtec*. The Act defines 'designer' as 'the person who created the design (Designs Act 2003). In this case it was stated that: "While the Designs Act states that the designer may be the entitled owner, if the design is created in the course of employment, or under a contract with another party, then the other party may be entitled to ownership. In this case, John Jarvie was not employed by Comtec and there existed no contractual agreement concerning the assignment of IP rights. Rather, John Jarvie was found to have acted as an independent contractor, with no contractual agreement pertaining to the assignment of IP he generated. John Jarvie was found to be the sole designer of both designs, and the entitled owner" (Wassouf 2019).

It should be emphasized that the right of registration of an industrial design covers not only a design identical to the registered one, but also applies to any design that does not produce a different overall impression on an informed user. When making a comparison, features resulting solely from the technical function of the product are not taken into account, because these remain outside the scope of protection.

According to the industrial property management practice, there is a significant problem here: *when* a product (let's call it a similar product) incorporates a reserved industrial design and *what elements* are protected as a result of the registration. In the literature of the case the problem can be depicted convincingly with a dispute that has taken place in the UK several years ago between Magmatic, a producer of Trunki suitcases for children, designed by Robert Law, founder of the company, and PMS International Group, which marketed its Kiddee suitcases as its own product. The dispute covered two confusingly similar suitcases for children, which were originally designed as a response to the problem of (comfortable) air travel with small children. Distinguishing features of the Trunki product, whose industrial design was registered, included: the size of the suitcase which can be taken by travellers inside the plane, the shape of the suitcase on which the child can sit (and the suitcase with a child can be pulled by a parent by the attached "leash") and the patterns of the suitcase which were attractive to children (Spalińska 2024).

As for the territorial scope of protection, in the case of national designs it is limited to the territory of Poland, while in the case of so-called Community designs protection extends to the territory of the entire European Union. The right from registration of an industrial design lasts for a maximum of 25 years.

2.2. Trademarks – protection of identifying marks

In the current market conditions, trademarks play a significant role, because they protect the rights of companies to the brand. They have a special value for consumers, because they determine the level of their recognition and are associated with the market position occupied resulting from the scale of recognition, and thus the level of sales. Certain activities of companies are associated with the promotion of trademarks, which are connected with specific costs.

Unlike inventions and industrial designs, trademarks do not protect a technical solution or the external appearance of a product. Their primary role is to distinguish the goods and services of one entrepreneur from the goods and services of another. The aim is to provide the consumer with full information about the origin of the product. The purpose of a trademark is therefore to individualize a given product or service. Thanks to trademarks, the consumer knows from whom they are purchasing a given product (the so-called origin marking function). A trademark is also a carrier of information and the consumer's ideas about a given product and entrepreneur (the so-called guarantee function of a trademark). When buying a product marked with a well-known trademark, the consumer has certain ideas and expectations, e.g. regarding its product quality. Trademarks' protection is achieved by obtaining a trademark protection right. In order for a trademark protection right to be granted, the designation must meet certain characteristics mentioned below (Wernicka 2018):

- sensory perceptibility (this primarily concerns perceptibility through sight, but it may also involve other senses, such as hearing or smell);
- graphic representability – a requirement necessary due to the need to precisely determine the scope of protection; for example, in the case of sound marks, this will be a notation on a staff;
- independence in relation to the product – the recipient must be able to separate the mark as a designation distinguishing a given entrepreneur from the product itself; therefore, the product itself cannot be a trademark;
- uniformity/brevity – this concerns the possibility of the mark being easily remembered by the recipient; therefore, the trademark cannot be, for example, an entire page of text.

Trademarks can be divided into the following basic categories (Prawo własności przemysłowej 2023): word marks, graphic marks, 3D marks, sound marks, combined marks. There is also the issue of unconventional trademarks. This particularly concerns olfactory marks (e.g. the smell of freshly cut grass for tennis balls), 3D marks or marks that are colours per se.

In the event of infringements of exclusive rights, enterprise should act immediately to ensure that these infringements are at least stopped. The enterprise should analyse the scale of the infringements and consider what financial resources you can allocate to combat infringers of your exclusive rights. There are some actions that can be taken (Biznes.gov.pl 2024):

- send a warning letter,
- use alternative dispute resolution methods (mediation or arbitration),
- file a request with the relevant national customs authorities to detain the goods (in the case of counterfeit goods),
- apply to the relevant intellectual property organization to revoke the registration,
- express an objection to the application for registration or granting of the protection right,
- take legal action.

3. Analysis of the patents activity in Polish companies

In the context of the analysed issues, analysis of the statistical data on patent procedures activity plays significant role in the paper since the growing number of applications has influence on growing importance of industrial property safety management.

In 2019, domestic entities filed 3,946 applications to the Polish Patent Office for the registration of inventions and the granting of patents. Although enterprises dominated among them (48% of all applications), the leaders in terms of the number of inventions turned out to be universities: Lublin University of Technology (135 applications), Wrocław University of Science and Technology (106) and Silesian University of Technology (103). The science sector was responsible for 39% of the total number of applications. Among enterprises, invention applications were mostly submitted by micro, small and medium-sized enterprises, accounting for a total of 88% of all applications from the business sector. The largest number of applications was submitted by companies from the Mazovian (19%) and Silesian (13%) provinces. Each of the remaining provinces accounted for less than 10% of applications, with the smallest share being those submitted by companies from the Lublin (1.5%) and Opole (1.6%) provinces.

In terms of technical fields, the largest number of inventions fell on civil engineering (236), high-quality organic chemistry (188) and specialist machines (181). According to the European Patent Office (EPO Patent Index 2019), the number of patent applications filed by Polish entities decreased by almost 10% last year. However, this decrease was preceded by two years of significant growth, and from a decade's perspective, the number of Polish applications increased from 205 to 469 in 2019, allowing Poland to take 26th place among the 50 classified countries. For comparison, Germany filed 26,805 applications last year, Belgium - 2,423, Ireland - 878, and the Czech Republic - 198. The Polish innovators conquering Europe were led by the biopharmaceutical concern Ryvu Therapeutics (formerly: Selvita) and the Jagiellonian University, which filed 8 patent applications each. The next places were taken by the 3D printer manufacturer 3DGence and the Silesian University of Technology (7 applications each), as well as Adamed Pharma (5 applications). Since 2005, the number of patents granted to entities in Poland by the Polish Patent Office has increased dramatically – from 305 to 1234 per year, which can be linked to the growing awareness of entrepreneurs about the possibility of applying for intellectual property protection. However, as it results from analyses of patent databases, only less than 20% of patents still protect intellectual property created in our country. 11% are still waiting for consideration, and 69% have no commercial value due to the loss, expiration or revocation of protection (Urząd Patentowy 2019).

Polish inventors and companies filed nearly 500 patent applications to the European Patent Office (EPO) in 2020. PIBJA research shows that around 3,800 of their patents were registered worldwide in 2019 and 2020 (PIBJA 2020). In 2021, the Office received in total 4 267 patent and utility model applications under the national and international procedures, including 4 199 applications under the national procedure. A total of 3 488 patent applications were submitted, of which 3 430 were filed under the national procedure and 58 under the international procedure. Domestic entities filed 3 377 applications for inventions, and foreign entities – 111 such applications. With regard to utility model applications, the statistics are as follows: a total of 779 applications were submitted under both procedures, of which 769 applications under the national procedure and 10 applications under the international procedure. Domestic entities submitted 722 utility model applications, while foreign entities – 57 such applications (Urząd Patentowy 2020).

The most innovative Polish companies include ITM Polska Sp. z o.o., then Valeo Autosystemy, DataWalk, Estimote Polska and Synthos. Among universities and scientific institutes, the Institute of Biochemistry and Biophysics of the Polish Academy of Sciences, the Institute of Immunology and Experimental Therapy of the Polish Academy of Sciences, the Jagiellonian University, the AGH University of Science and Technology in Kraków, and the Lodz University of Technology are leading. As mentioned above, the order does not correspond to the number of patent registrations in 2019-2020.

The quality of patents and the number of potential partners during the application were also taken into account. The number of universities and higher schools, which often boast a large number of patents, is particularly pleasing. Many other companies appear among the most innovative companies in patent departments. In patent department A - basic human needs - you can find many pharmaceutical companies, including Airway Medix, Adamed Pharma, and the Medical University of Warsaw. In patent section B, Wielton, Polska Wytwórnia Papierów Wartościowych and 3D LAB appear. It includes patents in the field of industrial processes and transport. In section C - chemistry and metallurgy - the leading are the faculties of the Polish Academy of Sciences and universities, additionally Celon Pharma, Adamed Pharma and Ryvu Therapeutics. Section D is not strongly represented and we decided to distinguish only one company, Schattdecor. Section E, dealing mainly with construction, is dominated by DMDmodular, Drutex, Jelenia Plast, So Easy System and Wala. The strongest patents in the field of machine construction, lighting, heating (section F) belong to Valeo Autosystemy, AIC and General Electric Company Polska. In section G - physics - companies from the top ten in the general ranking stand out, plus the Jagiellonian University, AGH University of Science and Technology and InPhoTech. Patent section H - electrical engineering - is dominated by Estimote Polska, Coinfirm Blockchain Lab, Phone Id, Samurai Labs and Silvair. The new technologies section (Y) is dominated by Polish universities of technology and companies AIC, General Electric Company Polska and Synthos (Prałat 2021).

The Polish Economic Institute examined the issue of patents in its latest weekly. PIE points out that in the period from 2018 to 2022, the Polish Patent Office granted 13,326 patents to domestic entities. The number of patent applications decreased by 23%, falling from 4,205 in 2018 to 3,240 in 2022. In 2022, the largest number of patents was granted to universities (975), business entities (842) and individuals (179). Individuals reported more inventions than research institutes (164) and institutes of the Polish Academy of Sciences (64). The geographical distribution of granted patents and protection rights indicates a predominance of the Masovian (466), Silesian (361) and Lesser Poland (255) voivodeships. The fewest patents were granted in the Warmian-Masurian Voivodeship (53), Opole Voivodeship (46) and Lubuskie Voivodeship (41). These results correlate with the number of research and development institutions operating in individual voivodeships (Polski Instytut Ekonomiczny 2024).

Poland is below the European average in terms of the number of patents filed. In 2023, the European Patent Office received just under 27 Polish patents per million inhabitants. In 2023, the number of patent applications to the European Patent Office (EPO) differed significantly between European countries. Switzerland took first place with 673.6 applications per million inhabitants. According to the Institute's economists, this confirms its high innovation potential. Denmark (426.62) and Sweden (398.8) came in next. With 26.75 applications per million inhabitants, Poland was below the European average, but ahead of Hungary (23.54) and Slovakia (22.47) (Zespół 300Gospodarki, Polski Instytut

Ekonomiczny 2024). Around 4,000 applications are filed with the Polish Patent Office each year (except for the record-breaking 2015). However, they are mainly submitted by universities and SMEs.

In 2023, the Polish Patent Office received 4,022 applications for national inventions to be legally protected. This is 22.5% more than in 2022 and a return to the pre-pandemic level. The activity of Polish inventors was also noticeable at the European level. In 2023, Poles submitted 671 applications to the European Patent Office in Munich (EPO), which is over 10% more than a year earlier. The largest number of applications was submitted by the University of Zielona Góra, the AGH University of Science and Technology and the Jagiellonian University. The largest number of applications among entrepreneurs was submitted by Fakro, a manufacturer of roof windows from Nowy Sącz. It has developed 12 ideas for its products in its own research centre. In the period 2019-2024, the Patent Office accepted the most patent applications in the area of civil engineering (almost 1.4 thousand) and specialized machines (1,072 applications). Almost a thousand applications concerned medical technologies. Polish inventive specialties are slightly different from those dominant in Europe. Although last year medical technologies took second place there in the number of invention applications (almost 16 thousand), the most applications to the EPO concerned electronic communications (17.7 thousand). The third area in terms of the number of applications there is computer technologies (Rochowicz 2024). Number of applications within industrial property protection submitted in Polish Patent Office in 2023 have been presented in figure 1.

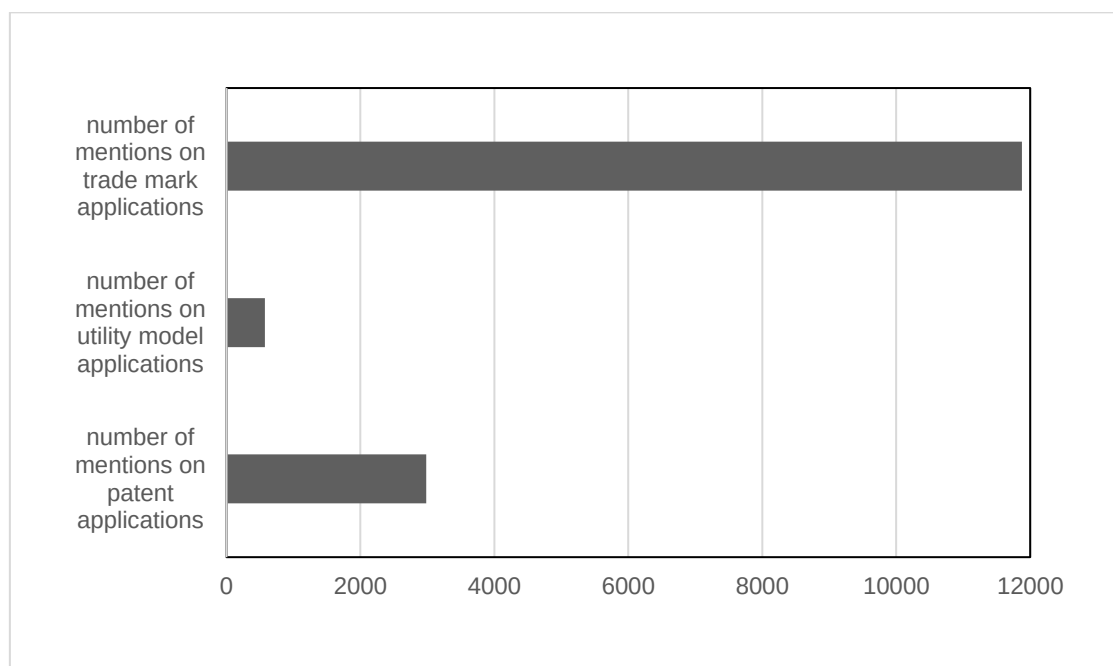


Figure 1. Number of applications submitted in Polish Patent Office in 2023.

Source: WIPO 2023.

Based on data presented in Figure 1, there is noted growing number of the trade mark applications that underlines the importance of the company brand as the element of product or service indication in the market.

Figure 2 present data with regard to granted rights within industrial property by Polish Patent Office in 2023.

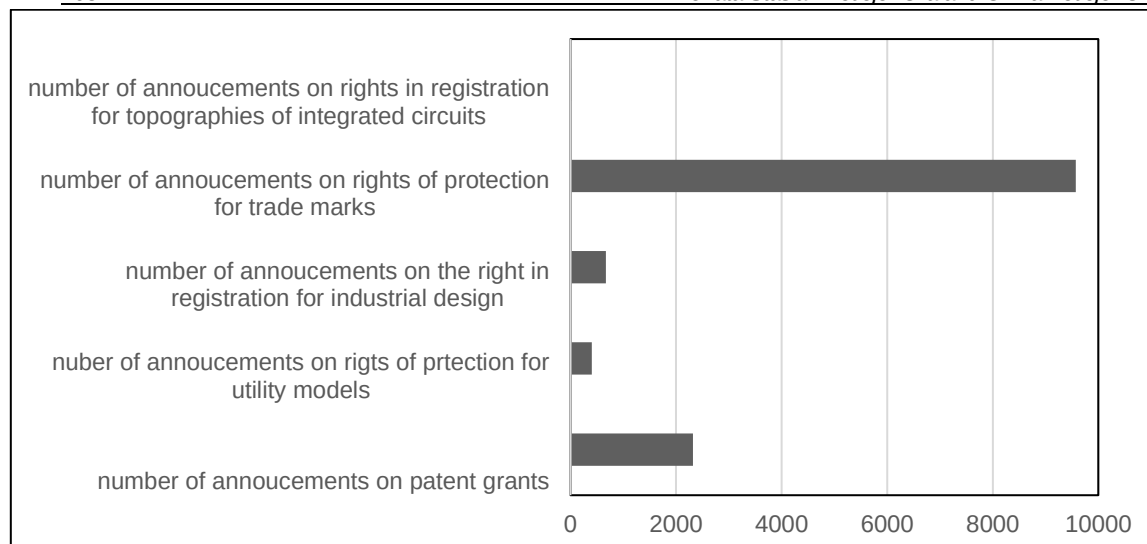


Figure 2. Number of granted industrial property rights granted by Polish Patent Office in 2023.

Source: WIPO 2023.

Data presented in figure 2 identify high number of trade marks that can be protected by industrial property rights. In 2023, the number of applications filed in Fast Track mode increased. This clearly shows that applicants choose this form of conducting proceedings, which ensures quick obtaining of protection for the selected subject of industrial property rights. WIPO reports (2023) confirms, that the high number of inventions and utility models under PCT procedure have been noted for the chemical industry and electronics. The highest number of European patent validations gained 9876.

In 2023, the Office continued active cooperation with the EUIPO within the European Union Intellectual Property Network, which brings together national intellectual property offices in cooperation in the area of unification of practices concerning trademarks and industrial designs. Total number of the rights of protection on and trade mark registrations remaining in force as of 31st December 2023 was 248 814. The highest number of trade mark applications was noted in the field of advertising (4316) and education (2957).

4. Comparative aspects of trade marks safety – case study

The analysis of legal aspects is crucial for the industrial property safety management. Discussed below cases concerns selected companies related to legal problems on trade mark registrations and its using in the business practices of enterprises.

The Court of Appeal in Szczecin, in its judgment of December 15, 2022 in case file reference I AGa 118/22, attempted to interpret the comparative aspects of trademarks and also discussed the aspect of infringement of protective rights in the light of art. 296 sec. 2(1) point 1 of the Industrial Property Law. In the thesis for the judgment, it indicated that there are two legal assets, protected independently of each other: the designation of the enterprise (objective aspect) and the company (subjective aspect). The designation of the entrepreneur is protected primarily by the provisions of the Civil Code - art. 431 of the Civil Code and subsequent articles. The subject of protection in art. 10 sec. 1 of the Industrial Property Law is, among others, such a designation of services that may be misleading as to their origin, also in relation to the enterprise. The subject of protection of the Industrial Property Law are, among others, exclusive rights resulting from the

registration of a trademark, the infringement of which results in claims for prohibiting its use by an entrepreneur who does so illegally. Thus, as was also indicated in the thesis, "There is nothing to prevent companies with the same designation from operating in a completely separate area, in such a way that their clientele does not intersect." In the justification for its judgment, the court also indicated that "By obtaining the right of protection, the right to exclusive use of the trademark for commercial or professional purposes is acquired throughout the territory of the Republic of Poland (Article 153, paragraph 1 of the Industrial Property Law). The protection provided for in this Act is provided for situations where the same market of services or goods in a geographical sense is entered, and the geographical scope of the right to exclusive use of the trademark for commercial or professional purposes exists throughout the territory of the Republic of Poland. In point 17 of its justification, the Court also indicated that the system of securing the right of protection for a trademark, provided for in the industrial property law, provides for the right holder's claim against the infringer to cease the infringement, to hand over the unjustified benefits and, in the event of culpable infringement, also to redress the damage caused (Article 296, paragraph 1 of the Industrial Property Law). The person entitled to the right of protection for a trademark for which the right of protection with earlier priority has been granted may prohibit another person from using in business transactions a mark similar to the trademark for which the right of protection with earlier priority has been granted in favour of that right holder in relation to identical or similar goods, if there is a risk of misleading the public, which includes in particular the risk of associating the mark with the trademark for which the right of protection with earlier priority has been granted in favour of that right holder (Article 296, paragraph 2, item 2) of the Industrial Property Law).

Purchasing technology and obtaining patent protection for intellectual property are two separate issues. We have therefore prepared a few tips for entrepreneurs who plan to purchase intellectual property and are interested in protecting it – both domestically and internationally. An entrepreneur who buys a patented invention must report to the Polish Patent Office. The office maintains registers that contain all information about the legal status of granted patents. The registers are public, and the data collected in them is available to all interested parties. Changing the entries in the register is a purely formal matter. We always do this when we buy patented technology. The national procedure is different from the international procedure.

Innovative technology should be patented in the country where we do business. In Poland, patents are granted by the Polish Patent Office. In Europe, the European Patent Organization (EPO), and in the world, the International World Intellectual Property Organization (WIPO). If a company purchases technology that has not been patented, but is an innovative solution on the market, it is worth trying to obtain patent protection. Remember that it is only available to inventions that have never been presented anywhere before. For example, if the creator of the technology has revealed their product on social media at least once, the Polish Patent Office has a formal basis to refuse to grant protection for the invention.

Many entrepreneurs are convinced that obtaining a patent is a guarantee of monopoly. In fact, the Patent Office gives the company priority and exclusivity for a given product. However, officials do not verify whether a similar solution introduced by another company will not enter the market until another company tries to file a notification. The entrepreneur must enforce the protection independently and look after his own interests.

Solaris Bus & Coach, headquartered in Bolechowo, Poland, is one of Europe's leading manufacturers of public transport vehicles. The company is well-known for its eco-friendly designs, including electric, hybrid, and hydrogen buses. Solaris holds patents related to its flagship product, the Solaris Urbino Electric Bus, which has won several awards, including the "Bus of the Year" in 2017. One key patented innovation is in its battery management and energy storage systems, enabling efficient and sustainable operation for urban transit.

Key Features of the Patent:

- Battery Management System (BMS): Solaris developed a patented BMS to optimize battery performance, ensuring longevity and safety while maintaining energy efficiency.
- Charging Solutions: The patent includes a rapid-charging mechanism using overhead pantographs and plug-in systems, allowing buses to recharge quickly during operational downtime.
- Energy Recovery System: An innovative system for regenerative braking that stores energy back into the batteries, increasing overall efficiency.

Impact of the Patent on the economy is following:

- Market Leadership: The patented technology positioned Solaris as a pioneer in the electric bus market, significantly increasing its market share in Europe.
- Environmental Benefits: The innovation supports reduced CO2 emissions and noise pollution, aligning with global sustainability goals.
- Economic Growth: Solaris' success has contributed to the Polish economy by boosting exports and creating jobs in the green technology sector.

This example illustrates how a Polish company leveraged its patented innovations to lead in a competitive and eco-conscious market, setting an inspiring precedent for others.

5. CONCLUSION

The management of the industrial property encompasses a complex interplay of legal, economic and strategic dimensions. Effective industrial property management relies on a robust legal framework that not only ensures the protection of rights but also addresses emerging challenges, such as globalization, digitalization, and evolving industrial standards.

By integrating legal principles with management strategies, stakeholders can maximize the value of industrial property assets while mitigating risks. Furthermore, a forward-looking approach, which adapts to technological advancements and international trends, is essential for maintaining a balanced system that encourages innovation and respects public interest.

Future research should delve deeper into harmonizing international laws, addressing disparities in enforcement mechanisms, and exploring the implications of emerging technologies like AI and blockchain on industrial property rights. Strengthening the synergy between law and management practices will remain critical for sustainable growth in an increasingly knowledge-driven economy.

Collaboration between technology providers, policymakers, and industry stakeholders will be essential to achieving a secure and resilient industrial ecosystem. Managing industrial property is crucial for companies wishing to maintain a competitive advantage and derive financial benefits from the results of research and development. This process requires not only an appropriate strategy, but also knowledge of national and international regulations and their specific interpretations.

Ensuring safety in industrial property management within the context of Industry 4.0 involves integrating advanced technologies to create safer and more efficient environments.

Recommendations for companies seeking to protect patents and industrial designs in the context of Industry 4.0, where technologies like IoT, AI, blockchain, and automation are presented below in the form of strategies for ensuring safety in industry 4.0

1. Implementation of secure protocols. Adopting secure communication protocols, such as Transport Layer Security (TLS), ensures encrypted data transmission between devices. Regularly updating software and firmware for IoT devices and management systems helps to close potential security gaps.
2. Blockchain for asset management. Blockchain technology can enhance security in industrial property management by providing a tamper-proof ledger for tracking ownership, transactions, and maintenance records. Its decentralized nature ensures transparency and reduces the risk of data manipulation.
3. Artificial intelligence for threat detection. AI-powered systems can monitor network traffic and detect anomalies in real time, providing an early warning of potential threats. AI can also optimize resource allocation to enhance both physical and cyber safety measures.
4. Comprehensive risk assessments. Conducting regular risk assessments helps identify vulnerabilities in industrial property management systems. Proactive measures, such as penetration testing and compliance with industry standards, are essential to mitigating risks.
5. Training and awareness. Ensuring that employees understand the potential safety risks and best practices in Industry 4.0 environments is critical. Regular training programs can improve preparedness and minimize human error, which remains a significant factor in safety breaches.

REFERENCE

- Biznes.gov.pl. 20204. *Własność intelektualna w firmie – podstawowe informacje*. Serwis informacyjno-usługowy dla przedsiębiorcy. <https://www.biznes.gov.pl/pl/portal/00367#12> download on 24.11.2024
- Decision OGH 4 Ob 193/22v, 4 Ob 72/21y, 4 Ob 174/19w (RS0120720). 2022.Federal Chancellery of Austria site RIS-Justiz RS0120720 legal principle OGH 4 Ob 177/05s ECLI:AT:OGH0002:2006:RS0120720 citation suggestion RIS-Justiz RS0120720
- Derevyanko, B., Koval, I., Dzhumageldiyeva, G., Venediktova, I., Patsuriia, N., Patiuk, S., 2020. Balance of Interests in the Mechanism of Protection of Industrial Property Rights. *Available at SSRN 3927945*.
- Designs Act 2003 (Cth) s 13(1)(a).
- Directive 98/71/EC of the European Parliament and of the Council of 13 October 1998 on the legal protection of designs, *Official Journal L 289*, 28/10/1998 P. 0028 - 0035
- Dhokare, S., Gaikwad, A.H., 2020. *A study of intellectual property rights and its significance for business*. Journal of Information and Computational Science. Vol. 10. Issue 2. pp. 552 – 561.
- John Michael Jarvie v Comtec Industries Pty Ltd [2018] ADO 5 (31 October 2018)
- He, W., Tan, L., Liu, Z. J., Zhang, H., 2020. Property rights protection, environmental regulation and corporate financial performance: Revisiting the Porter Hypothesis. *Journal of Cleaner Production*, 264, 121615.
- Kapeller-Hirsch, B., 2021. *Unregistered community designs: a secret weapon in design protection?* <https://www.schoenherr.eu/content/unregistered-community-designs-a-secret-weapon-in-design-protection/> download on 30.11.2024

- Malik, P. K., Sharma, R., Singh, R., Gehlot, A., Satapathy, S. C., Alnumay, W. S., Nayak, J., 2021. Industrial Internet of Things and its applications in industry 4.0: State of the art. *Computer Communications*, 166, 125-139.
- Moś, A.G., Maciejewski, M., Bux, U., 2024. Własność intelektualna, przemysłowa i handlowa, <https://www.europarl.europa.eu/factsheets/pl/sheet/36/wlasnosc-intelektualna-przemyslowa-i-handlowa> download on 20.11.2024
- PARP 2016. *Co można opatentować? Krótki przewodnik po własności przemysłowej*. <https://www.parp.gov.pl/component/content/article/53929:co-mozna-opatentowac-krotki-przewodnik-po-wlasnosc-przemyslowej> download on 24.11.2024
- Pivoto, D. G., De Almeida, L. F., da Rosa Righi, R., Rodrigues, J. J., Lugli, A. B., & Alberti, A. M., 2021. Cyber-physical systems architectures for industrial internet of things applications in Industry 4.0: A literature review. *Journal of manufacturing systems*, 58, 176-192.
- Polska Agencja Rozwoju Przedsiębiorczości, 2012. *Making Intellectual Property Work for Business: A handbook for chambers of commerce and business associations setting up intellectual property services*. Warszawa. pp. 13-14.
- Prawo własności przemysłowej, 2023. Dz.U.2023.1170
- Prałat, A. 2021. *Najbardziej innowacyjne firmy w Polsce według rejestracji patentowych: nowa nagroda Polskiego Instytutu Badań Jakości*. Polski Instytut Badań Jakości. Warszawa, <https://pap-mediroom.pl/nauka-i-technologie/najbardziej-innowacyjne-firmy-w-polsce-wedlug-rejestracji-patentowych-nowa>, download on 24.11.2024.
- Rochowicz, P. 2024. *Polskie patenty są na fali*. Rzeczpospolita. Prawo gospodarcze <https://legalis.pl/polskie-patenty-sa-na-fali/> download 24.11.2024
- Spalińska, K., 2024. *Industrial designs – How to register a design to have it effectively protected?* Żyglicka i Wspólnicy spółka komandytowa, Katowice, <https://www.kpr.pl/en/industrial-designs-how-to-register-a-design-to-have-it-effectively-protected/>
- Stryzhak, O. O., Akhmedova, O. O., Sushchenko, O. A., Pokolodna, M. M. 2020. *Industrial property management: sectorial aspect*.
- Ustawa z dnia 30 czerwca 2000 r. Prawo własności przemysłowej. Art. 1, 10-14, 24-29, 31, 63, 67, 75, 931-933, 94-130, 153, 174, 184, 196
- Urząd Patentowy. 2019. Raport roczny
- Urząd Patentowy. 2020. Raport roczny
- Urząd Patentowy. 2021. Raport roczny
- Urząd Patentowy. 2022. Raport roczny
- Urząd Patentowy. 2023. Raport roczny
- Wassouf, P. 2019. *Entitlement to ownership of a design registration: Get it right or risk losing it!* The POF group. Australia.
- Wernicka, K. 2018. Poinformowany użytkownik w rawie wzorów rzemysłowych Studium prawnoporównawcze. Urząd Patentowy w Polsce. Warszawa, pp. 132 – 143.
- Własność intelektualna w firmie – podstawowe informacje. Biznes.gov.pl
- WIPO 2016. Understanding Industrial Property. World Intellectual Property Organization. Switzerland
- Zespół 300Gospodarki, Polski Instytut Ekonomiczny 2024. Polska poniżej europejskiej średniej pod względem liczby zgłaszanych patentów. Są nowe dane <https://300gospodarka.pl/news/polska-ponizej-europejskiej-sredniej-pod-wzgledem-liczby-zglaszanych-patentow-sa-nowe-dane>, download on 24.11.2024
- <https://uprp.gov.pl/pl/aktualnosci/informacje/polska-z-10-procentowym-wzrostem-zgloszen-patentowych-do-europejskiego-urzedu-patentowego>. download on 24.11.2024
- <https://siecotwartychinnowacji.pl/baza-wiedzy/kupuje-patent-i-co-dalej-porady-dla-przedsiębiorców/> download on 24.11.2024