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Intellectual Property Rights & Patents

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1. Introduction

Have you ever wondered what the (R) symbol we sometimes see on logos stands for? Do you ever hear of the term “trade secret” and wonder if companies have a scroll in a glass bottle floating somewhere in the sea? What about copyright lawsuits we see some of our favorite artists involved in? In this report, we will be exploring the world of Intellectual Property Rights (IPRs) and patents, identifying the types of patents, how an individual may register for a patent in Jordan, and of course, we will be exploring the ethical considerations of IPRs and patents.

2. What are Intellectual Property Rights?

Intellectual Property Rights (IPRs) are a gateway towards legally protecting the works and inventions of humans all around the world [1]. There are four different types of intellectual property: trade secrets, copyrights, patents, and trademarks. The right to use, license, and profit from one's creations is granted by IPRs to the intellectual property creators. IPRs are incredibly important, as they play a great role in motivating creative innovators to invest in new concepts and services, which in return promote innovation and creativity. Figure 1 shows a 3.6% increase in the number of patents being registered worldwide when comparing 2020 with 2021, indicating more innovation and creation taking place worldwide [2][3].

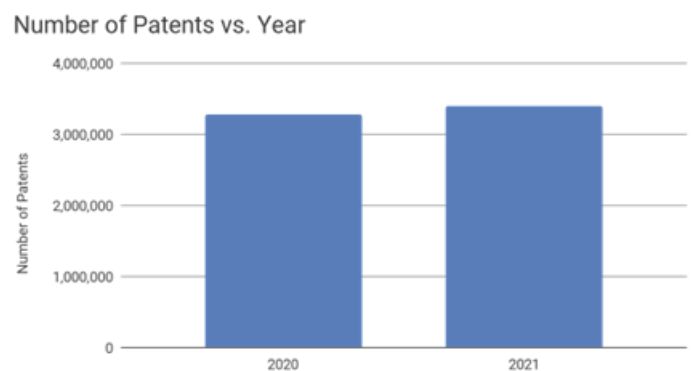


Fig. 1 Number of patents in 2020 and 2021
(<https://www.wipo.int/en/ipfactsandfigures/designs>)

There are so many different types of inventions, and each of these inventions may be protected differently. Words, symbols, and designs that distinguish a company's goods or services are protected by trademarks, just like how “Just Do It” is trademarked by Nike. Books, music, and movies that are original works of authorship are all protected by copyrights. Trade secrets on the other hand guard sensitive data that gives a business a competitive edge, just like how KFC protects their secret recipe, hence why no one could make fried chicken just as good! Lastly, patents protect new, beneficial, and non-obvious inventions & creations. There are so many different examples of patents, some are inventions that we use every single day, such as Thomas Edison’s patent for the lightbulb, and Alexander Graham Bell’s patent for the telephone.

3. Intellectual Property (IP) and Patents – Types

- 1- **Copyright:** Copyright is like a guard for creative things such as books, music, and movies. It gives the creator the power to decide who can copy, share, or perform their work. Copyright can last a very long time, even after the creator is no longer alive.
- 2- **Trademarks:** Trademarks act as protectors for brand names and logos. They make sure you can recognize and trust one product or service over another. As long as they're actively used and taken care of, trademarks can stick around forever.
- 3- **Patents:** A patent is like an exclusive pass for a new and useful invention. It allows the inventor to be the sole person who can make, use, or sell it for roughly 20 years. However, they have to share how it works with everyone.
- 4- **Trade Secrets:** Trade secrets keep things like secret recipes or special production methods safe. They can remain hidden as long as they're valuable and not shared.


4. Patents

A patent is a kind of intellectual property right that grants the owner the only authority to legally permit others for a predetermined amount of time to create, use, sell, or import their creation. For an innovator to attain this level of exclusivity, they should in return make the specifics of the creation public, unlike how we see other types of IPRs like trade secrets for example [4].

Patents have many advantages. First, a patent can protect the inventor's investment in research and development by preventing others from copying a concept. Second, a patent could give the inventor a competitive advantage by giving them a market monopoly, meaning the inventor could be the sole producer/supplier of a specific product or service, giving them the upper hand. Third, a patent can increase the company's value, which in return, makes the business more appealing to investors and buyers.

4.1 Three Types of Patents

Three different types of patents are internationally recognized, which are utility, design, & plant patents. Utility patents are issued all around the world (especially in the United States), and they make up more than two-thirds of all issued patents. Due to the majority of issued patents being utility patents, we sometimes use “patent” & “utility patent” synonymously. There are three different types of utility patents: general utility, which is based on functionality, specific utility, which focuses on how the invention carries out the function, and moral utility, which ensures that the invention is not poisonous and does not encourage individuals to perform any sort of harm or improper use. For utility patents, inventors must pay annual maintenance fees with a grace period of 6-months. If that grace period is surpassed, patent holders are charged an extra amount.



Moving on to the second type of patent, design patents. Design patents are granted for buildings or designs. Particular chairs, footwear, tables, equipment, fonts, and distinctive computer icons are all examples of what can be registered as a design patent. It is however required for the object that is being registered for a design patent to be aesthetically pleasing. The total life of a design patent now is 15 years (it used to be 14 years), and unlike utility patents, design patents need no maintenance fees.

With the rise of the interest in UI/UX & Human-Computer Interaction, many companies have filed design patents that include curved or designed edges or shapes of user display interfaces. The inventors need to make sure that the design is inseparable from the object to obtain design patent protection. A design patent only protects the appearance of an object, but a utility patent application must be filed if an inventor wants to protect the functional or structural features of an object.


The third and last type of patent is the plant patent. Patents on plants may be issued for creations, discoveries, or asexual reproductions of any distinctive plant species. Asexual reproduction refers to the process of regenerating a plant without using pollen, such as by grafting, cutting, or other nonsexual methods. Examples of plant patents include the Strawberry Plant “Aroma”, & the Grape plant “La Crescent”. Plant patents have a 20-year lifespan beginning on the application date, and there are no maintenance costs [5].

5. Process of Making Patent

Inventors must submit a patent application to the relevant government body to request a patent. The invention must be fully described in the application, along with how it functions and how it differs from currently available goods or procedures. Claims, which are detailed declarations of what the inventor considers to be patentable, must also be included in the application.

Novelty, utility, and non-obviousness are prerequisites for obtaining a patent anywhere around the world. Novelty requires that the invention be new, fresh, and unrevealed prior. In Jordan, the novelty requirement is an absolute novelty, meaning the invention is new and has not been used nor published anywhere else in the world. For the utility requirement, an invention must have real-world use, and the Jordanian e-government website mentions that the invention should be capable of industrial application. Lastly, for the invention to be considered non-obvious, it must not be obvious to a person of ordinary competence in the relevant field, meaning that the invention must not be very trivial or primitive. Someone with “ordinary skill in the art” would not know how to solve the problem the invention is trying to solve in the same manner or by using the same mechanism.

It's important to note that there is no such thing as a worldwide patent! Patents are territorial, which means that they are protected only in the country they were registered in. However, if an individual wants to protect & patent their invention in multiple countries, they must patent it individually in each country, and they only have 12 months to do so (from the day of the patent registration). This includes finding a proxy and translating all the documents needed in the



country's native country. Some individuals/corporations go for something called a Patent Cooperation Treaty (PCT), which gives inventors more time to figure out where they want to patent their inventions, so instead of 12 months, they get 30 months. However, a PCT is quite costly, as it may cost between \$3,700 and \$4,500 [6].

5.1 Patent Registration in Jordan

When checking the official site of the Jordanian e-Government, we get more detailed information on the documents, requirements, and registration costs an inventor must satisfy to register for a patent. According to the information provided, innovators in Jordan cannot apply for a patent online. They must apply in person, meaning they go to the Ministry of Industry, Trade, and Supplies/Industrial Property Protection Directorate/patent to register, or authorize a proxy through a legal authorization letter or an agent of industrial property in case the application concerns a foreign invention or a lawyer. A technical examiner will then be assigned according to the nature of your invention. And because inventions in Jordan must be novel, meaning there is no other invention out there that implements the same mechanics, the Jordanian patent office will also reach out to a foreign patent office to ensure that no other patent has been accredited for the same invention.


It costs 150 JDs to register for a patent. The cost includes a 50 JD registration fee, a 50 JD fee for publication in the Official Gazette, and a 50 JD fee for the final certificate. Some of the documents that must be brought in to the Ministry include an official ID card, a detailed description of the invention, drawings related to the invention, a statement under oath, the power of attorney duly certified by the ministries of foreign affairs and justice, a document proving that the applicant is entitled to registration if they are not the inventor, a copy of a document proving priority right if applicable (two copies in Arabic and two in English), a certificate of temporary protection of inventions presented during official exhibitions, and more that can be found in the Jordanian e-Government portal.

In Jordan, a patent is protected for 20 years beginning on the application date. Other than the registration fees mentioned above, inventors are also subject to a yearly maintenance fee that is due on the application's filing date (in case of delays in paying the maintenance fee, inventors are given a grace time of six months for late payments) [7].

6. Intellectual Property (IP) and Patents – Fields

Intellectual Property (IP) applies in various fields and industries to protect creative and innovative works. Here's an overview of how IP is relevant in different sectors:

- 1- **Cyber Security:** Intellectual Property is considered to be the most important asset to a lot of companies who need their IP protected, companies such as PepsiCo and Microsoft.



In the field of Cyber security, we have to protect the CIA (Confidentiality, Integrity, Availability) these 3 pillars of cyber security once achieved properly can ensure that the Intellectual Property is well protected.

- **Confidentiality:** we can achieve it via using good encryption algorithms in their proper place, e.g., using AES-128 or RSA instead of outdated algorithms like DES can ensure that intellectual property such as recipes or software is only accessible to authorized users.
- **Integrity:** we can secure these important IPs in a secure backup environment, and we can make sure that it was not modified by using integrity-preserving algorithms such as DSA, and Public Key cryptography.
- **Availability:** we can ensure that the authorized users have access to their intellectual property whenever they want to by making sure that the original files for the IP are not compromised (Corrupted, Deleted), and we have to take into consideration that the backup to it remains available for them to access in case their copies are compromised. We can use various methods to achieve the availability of the IP to the authorized users such as using SCTP protocol to reduce the likelihood of DDoS attacks.

2- Video Games:

- **Copyright:** protects the characters, artwork, music, and story in games. It means the game creators get to decide who can copy, share, or change their game, and for how long.
- **Trademarks:** These are like name tags for games and gaming companies. They make sure you can recognize a game or its creator.
- **Patents:** Sometimes, game makers invent new things for games, like special ways to play or new technology. Patents give them a special right to be the only ones who can use those inventions for a while.
- **Trade Secrets:** Game creators have secrets, like special game designs or strategies. They keep these secrets hidden from others in the industry.
- **Moral Rights:** These rights protect the people who create the game's content, ensuring their work isn't changed or used in ways that hurt their reputation.
- **Licensing:** Game companies often borrow characters from movies, comics, or other stories. They pay for permission to use these characters in their games.
- **Digital Rights:** In the digital age, games can be downloaded and played online. Special rights cover how these games are distributed and how players can create their content.
- **Enforcing Rights:** Game companies need to take legal action if someone copies or uses their game without permission, to protect their creations and brands.



3- Websites:

- **Copyright:** People can't just take the Website's words, pictures, and videos.
- **Trademarks:** The website's name and logo are owned by the owner of the website. Nobody else should use something too similar.
- **Domain Names:** The website's web address should be unique and not a copy of other websites.
- **Open Source:** The website's tools can be shared but with some rules to be considered.
- **Data and Privacy:** If the website collects people's data it must keep it safe and follow the rules about privacy.
- **User-Generated Content:** If the website allows users to post content (like comments or reviews), the website must set rules and policies for what users can post. This helps prevent illegal or harmful content.
- **Terms of Use and Privacy Policy:** Having clear and well-drafted terms of use and privacy policies is essential for informing users about how their data will be used and the rules governing the use of the website.
- **Patents:** websites might use technology or methods that have patents. Those who create websites should make sure they have permission to use this technology. If they own a patent, they should also make sure their intellectual property rights are safeguarded.

7. Intellectual Property (IP) and Patents – Advantages

- **No Fees:** IP protection doesn't require ongoing fees. Once you have the protection in place, there are no regular costs associated with maintaining it. This makes it a cost-effective way to safeguard your creations.
- **Competitive Edge:** Having IP, like patents, trademarks, or copyrights, gives you a unique position in the market. Your competitors can't simply copy what you've created, providing you with a competitive advantage. This exclusivity can be particularly beneficial in industries where innovation is critical.
- **Enhanced Value:** Intellectual property increases the overall value of your company. If you decide to sell your business, having IP protection in place can significantly boost the selling price. Whether you're selling part of your business, merging with another company, or being acquired, IP enhances the perceived worth of your company.
- **Income Generation:** IP isn't just about protection; it's also a source of potential income. You can license your IP to others, allowing them to use your creations in exchange for royalties. Alternatively, you can sell your IP rights, providing a lump sum of income. These avenues can be lucrative, especially if your invention or creation is in high demand.

- **Marketing:** IP protection, such as trademarks, helps with branding and marketing. When you have a registered trademark for your business name, logo, or product, it sets you apart from competitors. This differentiation is crucial in attracting customers and building trust in your brand.
- **Financing:** Financial institutions, investors, and lenders are often more willing to support businesses with established IP. Your IP assets can be used as collateral or evidence of the value of your business, making it easier to secure loans or attract investors.

8. Intellectual Property (IP) and Patents – Disadvantages

- 1- **Extra Costs:** Protecting your ideas and creations through intellectual property can be expensive, especially if your product is complicated. You might need to spend a lot on legal help, filing fees, and other related expenses.
- 2- **Copying and Stealing:** It's tough to stop people from copying or stealing your valuable ideas. Trying to stop them can sometimes upset your customers and hurt your business.
- 3- **Lower Quality:** If it seems like others might use your ideas without consequences, there's less motivation to make high-quality products. This could result in lower-quality stuff being made.

9. Ethical & Legal Considerations


As was already noted, the main goal of patents is to encourage innovation by compensating inventors for their ideas and time invested. The utilization of patents, however, can also give rise to moral and legal questions that affect a variety of stakeholders, including consumers, competitors, scholars, and developers.

9.1 Overview of Ethical and Legal Issues Related to Patents

Patents have complicated and diverse legal and moral ramifications. Accessibility of patented goods and services, which may be expensive for many consumers, is one of the most important challenges. This may result in monopolies or oligopolies, less market competition, and fewer options for consumers [8].

Another point to consider is the influence of patents on innovation and competitiveness. Patents can encourage innovation by offering incentives for research and development, but they can also stifle it by putting barriers in the way of new entrants or competitors and limiting follow-up or incremental advances that could enhance already existing goods or practices [8] [9].

Additionally, to receive patent protection, innovators must reveal their inventions to the public, which might help improve scientific and technical knowledge by encouraging its distribution. The release of key knowledge and information that would be helpful for additional research or development, however, can also be restricted by patents [8] [9].



Moreover, patents protect inventors from unlawful use or intellectual property infringement by granting them the sole right to use, produce, sell, or license their ideas. However, patents can make it unclear who is in charge of or owns intellectual property that was developed by several people or that was based on natural resources or common wisdom [8] [9].

Finally, patents can lead to disagreements over the truthfulness, scope, or interpretation of patent claims and make it difficult to enforce patent rights across various jurisdictions or legal systems, even though they grant inventors the right to sue anyone who violates their patent rights without their permission [9] [10].

9.2 Effect of Patents on Various Industries


In many industries, patents are utilized to safeguard intellectual property and promote innovation. Nonetheless, the use of patents in some areas is more problematic than in others. To encourage the development of new treatments and medications, the pharmaceutical sector relies largely on patents. Yet, the application of patents in this sector poses moral and societal issues about low-income and developing-nation populations' access to life-saving medications. Patents may lead to high drug prices that are out of reach for many people who need them and restrict the availability of less expensive generic alternatives [11] [12].

To prevent unlawful reproduction and imitation of software developers' systems and applications, the software industry likewise significantly relies on patents. Although patents are essential for safeguarding innovation in this sector, software developers may face legal difficulties and liabilities as a result of their use. Patents may restrict how existing software code is used and modified, which may limit software engineers' creativity and ability to work together. Innovators and competitors may face difficulties as a result of patent litigation, which can be expensive and time-consuming for both parties [11] [13].

To promote investment and innovation in biotechnology research and development, the biotechnology sector also largely relies on patents. Nonetheless, the use of patents in this sector raises moral and legal issues related to the ownership and commercialization of biological products and processes. Patents may grant exclusive rights to natural resources or traditional knowledge that belong to native groups or are in the public domain, raising questions about biodiversity and the sustainability of the environment [11] [13].

9.3 Current Issues and Controversies Regarding IP and Patents

The tech and healthcare sectors have seen an increase in patent-related disputes in recent years. Insulin prices have been a source of concern in the healthcare industry, with many people unable to afford life-saving medication. A prankster impersonating Eli Lilly, a pharmaceutical business that makes insulin, published a fake tweet in 2022. According to the tweet, Eli Lilly's insulin pricing would be reduced by 90% in response to public pressure, which would result in a decrease in the market value of the company's stock [14]. Due to the incident's exposure to the problem of excessive insulin costs in the US, various activists and politicians have urged for the lifting of the



insulin patent or the introduction of generic alternatives [15]. Frederick Banting discovered insulin in 1923, but he declined to have his name on the patent and instead sold it for one dollar [16].

As for the tech industry, Patents for video technology and artificial intelligence have been causing debate lately. A text-to-image model called Stable Diffusion can create accurate images from text descriptions. Researchers and engineers from CompVis, Stability AI, LAION, and RunwayML released the model in 2022. However, Getty Images and a number of artists have filed a lawsuit against Stability AI, the business that created Stable Diffusion, for allegedly violating their copyrights. The artists claim that Stable Diffusion utilized their work as training data without their permission or payment, while Getty Images alleges that Stability AI copied and processed millions of photographs from its website without the necessary licensing. The complaints seek billions of dollars in financial damages as well as an injunction prohibiting Stability AI from utilizing or distributing Stable Diffusion. The claims have been refuted by Stability AI, which maintains that Stable Diffusion is a transformative use of already-existing imagery and does not infringe on anyone's intellectual property rights [17] [18] [19].

In the video technology space, RED Digital Cinema, a company that manufactures high-end movie cameras, has patented a process of compressing raw footage on camera without compromising quality. Nonetheless, several competitors and critics have accused RED of patent trolling, claiming that RED's patent is invalid or obvious and hinders innovation in the camera industry. Due to the usage of compressed raw video technology by other businesses like Apple and Nikon, RED has also been involved in legal battles with these businesses [20] [21] [22].

9.4 Ethical Issues in IPRs and Patents

- **Plagiarism and Unauthorized Use:** It is unethical to use someone else's creations without giving due credit or permission.
- **Piracy and Counterfeiting:** Unauthorized duplication and distribution of content protected by copyright or trademark, such as software, motion pictures, or branded products, can result in moral dilemmas about just payment for authors and the effects on relevant sectors.
- **Exploitation and Fair Compensation:** An ethical consideration is making sure that creators and contributions receive fair rewards. Concerns about intellectual property ethics might arise from unfair contracts or taking advantage of creators.
- **Access to Knowledge:** It is a constant struggle to strike a balance between the ethical requirement to guarantee everybody has access to information, and breakthroughs, and the necessity to safeguard intellectual property.

9.5 Legal Issues in IPRs and Patents

- **Infringement Lawsuits:** When someone utilizes, copies, or distributes intellectual property without the required permissions, accusations of infringement are made. This frequently results in a lawsuit asking for injunctions or damages.

- **Patent Disputes:** To defend their patents or contest the legitimacy of patents awarded to others, patent holders may participate in legal disputes. These disagreements frequently entail intricate legal and technical debates.
- **Trademark Violations:** When unregistered parties utilize trademarks confusingly similar to registered marks, there are legal ramifications and customer confusion. Owners of trademarks may go to court to defend their company.
- **Copyright Infringement:** Copyright holders may pursue legal action for unauthorized use, duplication, or distribution of their protected works. They may be entitled to damages or injunctions as remedies.

10. Conclusion

Intellectual property rights (IPRs) are essential for fostering economic growth and development in addition to safeguarding the creator's investment and fostering innovation. IPRs encourage investment in new technology and goods, which can lead to the creation of jobs and economic progress. However, it is very important to recognize the ethical implications of IPRs and patents and be aware of the ethical considerations and issues revolving around IPRs and patents.


Also, when we further explored the process of applying for a patent (specifically in Jordan), we realized that, unlike other Arab countries, we still have to submit documents in person even though the process of registering for a patent can be done online.

To conclude, IPRs are a crucial part of creation and innovation, hence why we advocate for a more technologically advanced system as well as government grants to steer us toward a more prosperous future.

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