



Comparing Patent Protection in Indonesia with That in Singapore and Hong Kong

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Article	Abstract
<p>Keywords: Protection; patent: Indonesia; Singapore; Hong Kong.</p> <p>Article History Received: Feb 20, 2021; Reviewed: Mar 13, 2021; Accepted: June 15, 2021; Published: June 18, 2021</p>	<p><i>The discovery of technology has a huge impact on the economy of a country, so many countries focus on developing technology and apply this technology in their respective countries. Technological inventions must register patent rights to obtain legal protection to avoid losses that will harm inventors, stimulate creativity in creating new technologies and create fair business competition among companies engaged in technology. This normative research aims to compare patent protection in Indonesia, Singapore, and Hong Kong. The benefit of this research is that it can contribute to scientific literature in the field of patent rights, can provide an overview of the form of patent rights arrangements in several countries outside Indonesia, so as to avoid disputes and/or misunderstandings with other countries. The participation of Indonesia, Singapore, and Hong Kong in ratifying the Convention on the World Trade Organization and the agreement on the Trade Aspects of Intellectual Property Rights (TRIPs) obliges these countries to establish regulations on patents in their respective countries. Although the application of patent law in Indonesia, Singapore, and Hong Kong is based on the terms of the TRIPs agreement, the implementation and regulations must have differences. Patent registration in Indonesia, Singapore, and Hong Kong has the same procedure, namely fulfilling the formal requirements, substantive examination, then the announcement stage. The term of patent protection in Indonesia and Singapore is similar, which is 20 years from the date of filing. However, it is different from Hong Kong, namely from the date of filing. In patent disputes, there are two ways of settlement, namely litigation and non-litigation. Patents in Indonesia, Singapore, and Hong Kong have another similarity, namely that they are transferable and can be licensed. The focus of this research is only to compare the application of patent law and not to examine its strengths and weaknesses, so it is considered important to do further research on this matter.</i></p>

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INTRODUCTION

The technological developments in this digital era are very rapid. Technology has become a necessity for society to live their daily life. Therefore, the use of technology has increased vastly (Lukito, 2017). Technology is a system that facilitates human life (Al-Fatih et al., 2019). Computers, cellphones, machines, cars, motorbikes, and other related objects represent frequently used technology in human life (Yuan & Zhang, 2020). The significant development of technology brings an impact on human life, both positive and negative impacts. The positive impact that can be felt is the increasing intensity of communication, facilitating information retrieval in the era of globalization, providing means of transactions in the business world, and facilitating work because it is more effective and efficient (Sidik, 2013). Meanwhile, the negative impact is the incoming unwanted foreign culture that is detrimental for young generation in Indonesia, excessive use of gadgets, and addiction that damages brain development in children (Novianti & Garzia, 2020; Palupi, 2020; Putra & Patmaningrum, 2018). The quality of human resources also decreases because it is replaced by a computer or robot system resulting in high unemployment. Technology has become one of the main necessities in human life, and it is inextricable from day-to-day activities. The advanced development of education makes younger generation more productive and creative in utilizing existing technology, and technology-based innovation keeps growing and benefits human life. This beneficial improvement is obvious in the invention of wi-fi in 1991 (Hamdan, 2018). Economic development and business competition also drive companies engaged in the technology, in competition to create the latest and sophisticated technology that is beneficial to human life (Utami, 2019).

Indonesia is one of the parties that feel the impact of technological developments, in terms of trade, information, and economy. The economic growth of a country can increase with technology (Nasir, 2016; Roisah, 2018). Therefore, many countries focus on advancing and supporting their citizens in education, technology utilization, and discovery by applying technology (Indradewi, 2018). The existing technological inventions must be patented so that related inventors can get legal protection for their inventions. Another reason for getting patent protection is to allow inventors to be rewarded with exclusive rights for exerting their creativity and knowledge in making an invention (Wang, 2018). With patent protection, the public will appreciate the invention more.

Countries that participate in ratifying conventions on the Establishment of the World Trade Organization that approve the agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs agreement) are required to implement the contents of these international agreements (Amboro, 2019; Payumo et al., 2014; Rois & Roisah, 2018; Syafrida, 2019). One of those agreements include the obligation to adjust and establish laws relating to applicable patents with the provisions of the ratified

international agreements. In Indonesia, patents are regulated in Law Number 13 of 2016 concerning Patents (Indonesian Patent Law). The definition of a patent according to the Indonesian Patent Law is an exclusive right granted by the state to an inventor for his/her invention in the field of technology in certain time to carry out the invention himself/herself or to give approval to other parties to implement it. An exclusive right referred to in this case is the right of the inventor to implement or prohibit another person without his/her consent to make, export, export, sell, or distribute an invention.

Singapore, as one of the countries participating in the TRIPs agreement, also implements laws and regulations regarding the protection of Patents in its country. According to the Intellectual Property Office of Singapore (IPOS), a patent is a right granted to an invention owner that prevents others from making, using, importing, or selling his/her invention without permission (Chng, 2002). Singapore has patent regulations based on the United Kingdom's Patent Act of 1977. Singapore patents are protected internationally under the Patent Cooperation Treaty (PCT) (Corporate Services, 2019). The State of Hong Kong which participated in the TRIPs agreement also regulates patent rights. According to The Government of Hong Kong Special Administrative Region Intellectual Property Department, a patent is an exclusive right for an inventor to use his invention and protect the invention by giving the inventor legal rights to prevent others from making, using, selling, or importing the invention. The laws and regulations regarding Patents in Hong Kong are governed by Patent Ordinance (Cap. 514), Patents (Designation of Patent Offices) Notices (Cap. 514A), Patents (Transitional Arrangements) Rules (Cap. 514B), and Patent (General) Rules (Cap. 514C) (Intellectual Property Department: The Government of the Hong Kong Special Administrative Region, 2004). The patents in Indonesia, Singapore, and Hong Kong have a similar definition. Indonesia, Singapore, and Hong Kong are the countries that have participated in the TRIPs agreement so that they are obliged to regulate Intellectual Property Rights in their respective countries. Although the basis of these various regulations is the TRIPs agreement, the application of laws regarding Intellectual Property Rights in these countries is different.

Previous research has been conducted by 1) Lukman Hakim & Nalom Kurniawan who studied the constitutional protection of the citizens' economy through patents in Indonesia (Hakim & Kurniawan, 2020); 2) By Abdur K. Jaelani, Alexander A. Kurniawan & Lusya Indrastuti who focused on studying the standardization of patent granting in drug inventions in Indonesia (Jaelani et al., 2019); 3) By Devica Rully Masrur who reviewed the protection of genetic resources based on the Indonesian Patent Law (Masrur, 2019); 4) By Mutia D.A. Zuami & Tresnawati Bakti, who reviewed the legal protection of patent rights holders due to the removal of patent ownership from the general register of patents (Zuami & Tresnawati, 2020); 5) By Herda Mardiana, Muhamad Amirulloh & Pupung Faisal who focused on patent rights as

objects of fiduciary guarantee (Mardiana et al., 2020); 6) By Rignaldo Ricky Wowiling who reviewed patent law enforcement according to the TRIPs Agreement and its implementation in Indonesia (Wowiling, 2017); 7) By Moza Ramadhani, Muhamad Amirulloh & Pupung Faisal who focused on protecting inventors related to the renewal element of patents being deleted due to not paying annual fees (Ramadhani et al., 2021); 8) By Henry Soelistyo Budi who focused on the study of policy of Indonesian patent legal system (Budi, 2019); 9) By Salsabila Khairunnisa who reviewed the comparison of legal protection for inventions between Indonesia and Japan (Ningsih et al., 2019); and 10) By Rinayah Nasir who examined the rights attached to the inventor for the patent production process (Nasir, 2016). In contrast to these studies, this research aims to compare the patent protection law applications in Indonesia with that in Singapore, and Hong Kong.

This research is considered important to do, because it can contribute to the scientific literature in the field of patent rights. In addition, this legal research is also expected to provide an overview of the form of patent rights arrangements in several countries such as Singapore and Hong Kong, so as to avoid disputes and/or misunderstandings with other countries. This comparative legal research on patent rights is also considered to be helpful in the formation of national laws in order to produce good regulations.

METHOD

With Normative legal research method, statutory, and comparative approach, this research examines the comparison of positive laws that exist in several countries regarding the application of patent protection. Comparative research on patent protection between Indonesia, Singapore and Hong Kong was conducted because these three countries participated in the TRIPs agreement and were therefore obliged to regulate Intellectual Property Rights. However, although the basis of these regulations is the TRIPs agreement, the application of the Intellectual Property Rights laws in these countries is different. The data used are secondary data obtained indirectly from literature studies that examine aspects of theory, comparisons, structures, and legal explanations. The secondary data was analyzed using descriptive qualitative analysis techniques to find correct and scientifically proven conclusions (Suteki & Taufani, 2018). Secondary data in this research consists of primary law such as Law Number 13 of 2016 concerning Patents (Indonesian Patents Law); Singapore Patents Act (Chapter 221); and Patents Ordinance (Cap.154), Patents (Designation of Patent Offices) Notices (Cap.514A), Patents (Transitional Arrangement) Rules (Cap.514B), Patents (General) Rules (Cap. 514C), & The Registration of Patents Ordinance (Cap 42). Not only primary legal materials, this research also employed secondary legal materials and tertiary legal materials constituting previous research articles, online articles and others.

RESULTS AND DISCUSSION

Departing from the history of the presence of Intellectual Property Rights, the World Intellectual Property Organization (WIPO) defines intellectual property as “Creations of the mind: inventions; literary and artistic works; and symbols, names and images used in commerce”. Of course, intellectual property is closely related to the world of trade because its emergence was triggered by the desire of WIPO member countries to protect their economies in the era of free trade (Athreye et al., 2020). Based on this understanding of intellectual property, The term Intellectual Property Rights is defined as the rights given to everyone to the creation of ideas in the form of new discoveries, literary works and works of art, symbols, names and images used in trade (Amrikasari, 2017a).

Provisions regarding Intellectual Property Rights are contained in Annex 1C to the WTO Agreement entitled Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement). The TRIPS Agreement came into effect since 1995. The transitional period was applied to developing countries which were obliged to enforce it no later than four years after or in 2000, while underdeveloped countries were given no later than early 2006 (Amrikasari, 2017a).

The TRIPS Agreement is a result that has been achieved and has also adopted two major international conventions in the field of industrial property and copyright, namely the Paris Convention for the Protection of Industrial Property and the Berne Convention for the Protection of Literary and Artistic Works (Athreye et al., 2020). The consequence of the victories of developed countries in intellectual property rights has brought the concept of property and ownership of the western countries into law in developing countries including Indonesia, Singapore and Hong Kong. The TRIPS Agreement is not a specific rule regarding the protection of intellectual property rights. The TRIPS Agreement is an agreement that is part of the WTO Agreement signed by member countries which obliges all members to make rules regarding intellectual property rights in their respective countries (Wicaksono, 2020).

Every country that has signed the agreement, including Indonesia, Hong Kong and Singapore, must comply with the agreed international rules. However, the rules contained in the international convention are only general rules. For the application of general rules that have been agreed upon, it is up to the State to enforce the rules in their national laws in full. Because the enforcement and regulations are fully delegated to the respective countries, it is necessary to apply patent arrangements in Indonesia, Hong Kong and Singapore as participating countries to ratify the TRIPS Agreement. Thus, this comparative research will discuss the legal sources of patent regulation in the three countries, the formalities of registration procedures, the period of protection, legal actions and other matters of a general nature.

The Application of Patent Protection Law in Indonesia

Patents in Indonesia are regulated in Law Number 13 of 2016 concerning Patents (Indonesian Patents Law). Patent implementation in Indonesia is adjusted to the standards in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement) (Erlina B & Safitri, 2020; Ribowo & Raisah, 2019). Patents are intellectual property granted by the state to inventors for their inventions in the field of technology that play a role in supporting the development and economy of a nation (Hakim & Kurniawan, 2020; Jaelani et al., 2019). The subject and object of the law are inseparable when it comes to rules or laws regarding patents. The subject of a patent is an inventor, and if an invention is produced by more than one inventor, the rights to the invention are granted to all the inventors concerned (Hidayah, 2012; Novianti, 2017; Sampat & Shadlen, 2018). In this case, an inventor is a person or a group of people that is first declared as an inventor/inventors in the application. Meanwhile, the object of a patent is an invention created by an inventor.

There are rights inherent in patents such as exclusive rights, moral rights, and economic rights. Exclusive rights are granted by a state to inventors so that no other party can take advantage of the invention. Taking advantage, in this case, can be in the form of making, using, exporting, importing, selling, and distributing without the approval of the inventor (Adnyani et al., 2020). Moral rights are the inventor's right to be generally recognized. Moral rights also protect personal value and reputation from his/her inventions. Meanwhile, economic rights are the inventors' rights to obtain economic benefits from their inventions, such as selling, distributing, duplicating, and others (Pramoediyanto, 2020). The grant of patents is based on the desire to develop science and technology, reward an invention, and provide incentives for an invention. The patent system also protects the interests of inventors. The patent protection system is open and the inventor is obliged to describe the invention in detail so that other people can study and implement the invention (Suputri & Sukihana, 2020).

According to the Indonesian Patent Law, patents are divided into two forms, namely ordinary patents and simple patents. The difference between ordinary patents and simple patents lies in the type of invention, the period of protection, and the number of inventions that can be registered. An ordinary patent is granted for a new invention, whereas a simple patent is granted for an invention resulting from the development of an existing invention. Although a simple patent does not require a new invention, the invention must have a more effective function than the previous invention (Mukhlislin, 2020). As stated in Article 22 and Article 23 of the Indonesian Patent Law, the period of a patent is 20 years from the date of receipt while the term for a simple patent is 10 years. The period of patent protection cannot be extended. If that period has expired, an invention will become public property, which means that other parties are allowed to produce and sell it freely. When the patent starts, expiration

date will be recorded and announced. This regulation is intended to prevent a party from continuously having the power to control an industry and it is feared that it could cause unfair business competition to the detriment of society (Waspiah, 2018). Not all inventions can be patented. An invention can be granted a patent if the invention is new and contains inventive yet applicable steps when applied in industry. The invention can be considered new if it is not the same as an existing invention at the date of acceptance. A patent cannot be granted if the invention is against the prevailing laws and regulations, public order, and morals. Patents also cannot be granted if the manufacture of the invention involves humans or animals in the process of examination, treatment, medication, and surgery (Kurnianingrum, 2019; Purwaningsih, 2020).

Patent rights are granted based on application. Patent applications are filed by completing several requirements in the form of patent specifications which include the title of the invention, the background of the invention, a description of the invention, a picture, and a description of the features that are declared new and inventive in the invention (Suwardi, 2019). Applications can only be submitted for one invention or one unit of an invention. Applications are submitted in Indonesian and a patent application filing fee is paid to the Directorate General of Indonesian Intellectual Property Rights (*Direktorat Jenderal Kekayaan Intelektual*) of IDR. 750,000, -. After the minimum requirements have been met by the applicant, the applicant will be given an acceptance date. Furthermore, the applicant must complete various formal requirements in the form of the required documents within a period of 3 (three) months. After the documents are complete, the Directorate General of Intellectual Property Rights of Indonesia will announce the patenting in the Patent Official Gazette. The announcement will be made within 18 (eighteen) months from the date of receipt. For simple patents, the announcement will be made within 3 (three) months from the date of filing. During the announcement period, the public has the right to object in writing to the Directorate General of Intellectual Property Rights of Indonesia if they find that the invention does not meet the requirements to be patented (Suputri & Sukihana, 2020; Suwardi, 2019). After the announcement period ends, the applicant must submit a request for substantive examination by submitting a form and paying a fee of IDR. 2.000.000 to the Directorate General of Intellectual Property Rights of Indonesia. This substantive examination aims to check whether the applied patent has met the substantive requirements. Within a period of 36 (thirty-six) months from the date of receipt, if the applicant does not submit a request for substantive examination, the application will be withdrawn and the invention will become public property. When the substantive examination has been completed, the patent examiner will decide whether the applied patent is rejected or accepted. If the application is rejected, the applicant has the right to file an appeal to the Patent Appeal Commission and may proceed to the Commercial Court and further to the Supreme Court. If the

applicant accepts the refusal, then the invention requested will become public property (Jazuli, 2018).

Furthermore, if the Patent Application is granted, the inventor will receive a patent certificate. Patents are valid since inventors are granted a patent certificate and are retroactive from the date of receipt. After obtaining a patent, the inventor as the patent holder is required to pay an annual patent maintenance fee until the last year of the protection period. If the inventor or patent holder does not pay for 3 (three) consecutive years, the patent will be deemed null and void (Direktorat Jenderal Kekayaan Intelektual - Kementerian Hukum dan HAM RI, n.d.). The patent can be transferred either in whole or in part using a written agreement, grant, inheritance, testament, and so on. This is stated in Presidential Regulation Number 37 of 2010 concerning Terms and Procedures for Registration of Patent Transfer. Patent transfer can be done by applying for the registration of the patent transfer to the Directorate General of Intellectual Property Rights of Indonesia, including written evidence. Patent transfer is different from the grant of patent licenses. Patent transfer is the transfer of ownership of a patent in whole or in part. This transfer must be registered in the Directorate General of Intellectual Property Rights and recorded in the general register of patents. If the transfer is not registered, the patent transfer process is considered invalid and void. As mentioned in Article 68 of Law Number 14 of 2001 concerning Patents, the transfer of patents does not remove moral rights owned by the inventor. This means that even though the patent has been transferred to another party, the name and identity of the inventor concerned will remain on it.

A patent license is a license granted by an inventor to a licensee based on an agreement to use a patent that is still protected for a certain period. This agreement states that the inventor as the patent right holder grants a license to another party through an agreement to implement the exclusive rights of the inventor. The grant of this license is only intended to provide economic rights from the patent within a certain period and conditions (Amrikasari, 2017b). The license agreement is divided into two, namely an exclusive license agreement and a non-exclusive license agreement. An exclusive license agreement is an agreement given to one licensee in a certain area. Meanwhile, a non-exclusive license agreement is an agreement given to several licensees in several regions. The inventor or patent holder has the right to grant licenses to other parties for product and process patents. A license agreement must be registered with the Directorate General of Intellectual Property Rights of Indonesia to counteract agreements that contain unfair elements or requirements. In Article 71 paragraph (1) of the Indonesian Patent Law, it is stated that “the license agreement may not contain provisions, either directly or indirectly, which can harm the Indonesian economy or contain restrictions that hinder the ability of the Indonesian people to master and develop technology in general and which is related to the

invention given the patent in particular". Request for registration of the license referred to the statement will be rejected by the Directorate General of Intellectual Indonesia.

Article 130 of the Indonesian Patent Law states that there are four reasons for a patent to be revoked: 1). A patent revocation application that is granted by the minister by submitting a written application. Patent holders can file all or part of a claim against the ministry. Patent revocation through an application to the minister cannot be done as long as the licensee does not provide written approval which will be attached to the patent application. The decision to revoke a patent will be notified by the minister in writing to the patent holder or his/her attorney, then it will be recorded and announced and will officially take effect from the date the ministerial decree was enacted; 2). Patent revocation due to a court decision that has permanent legal force; 3). Patent revocation due to decisions issued by the Patent Appeal Commission, where point 2 and 3 are carried out if the existing invention contravenes the applied regulations regarding aesthetic creations, schemes, rules, methods for carrying out activities that involve mental activities, games, or business, as well as processes or its implementation is contrary to morals, prevailing laws and regulations, public order, and morality. The revocation of a patent by courts can also be imposed if the patent resembles another invention that has been patented in advance, or if the patent rights holders violate provisions related to the manufacture and use of products outside Indonesia or do not transfer technology to absorb investment and provide employment opportunities; and 4). Failure to fulfil their obligation to pay annual fees within a period of 3 (three) consecutive years or a predetermined period. Regarding the revocation of a patent, the related minister is obliged to make a written announcement via electronic and non-electronic to patent holders, licensees, or proxies, and then it is recorded and announced. Patent holders or licensees who are declared null and void are not required to pay annual fees and eliminate all legal consequences related to the patent. Furthermore, Article 141 of the Indonesian Patent Law also states that Patents that have been deleted cannot be revived, except based on a court decision.

Along with the development of the economy and trade, especially in the era of free trade, intellectual property rights disputes arise resulting in economic losses. Based on Article 153 of Indonesian Patent Law, these disputes can be resolved through two channels, constituting litigation and non-litigation. Litigation is the settlement of disputes at court. Resolution of related disputes through litigation involves filing a lawsuit at Commercial Court. On the other hand, the non-litigation is for dispute resolution through Alternative Dispute Resolution (ADR). Alternative Dispute resolution is divided into several ways of negotiation, mediation, conciliation, and arbitration. Based on the explanation above, the legal basis for patent protection in Indonesia is Law Number 13 of 2016 concerning Patents, and the formalities for filing patent applications are carried out at the Directorate General of Indonesian Intellectual

Property Rights (*Direktorat Jenderal Kekayaan Intelektual*). The patent is then granted for a period of 20 (twenty) years from the date of receipt and cannot be extended (Anonim, 2017).

Application of Patent Protection Laws in Singapore

Singapore is one of the developed countries and has the strongest regime in terms of protecting intellectual property. In 2019, The World Economic Forum's Global Competitiveness Index ranked Singapore second for intellectual property protection (Corporate Services, 2019). The high ranking is the result of the Singapore government's efforts in encouraging technology development and intellectual property registration in the country and provides strong legal protection for registered intellectual property. Patent regulations in Singapore have been through some changes. In the previous regulation, patent protection in Singapore is obtained by receiving a patent grant from the United Kingdom (UK) first and then be registered in Singapore under the Registration of United Kingdom Patents Ordinance (Chng, 2002). These procedures and regulations are considered ineffective because it is cost-, time- and energy-consuming. Following consideration and consultation with legal experts, the patent system was finally revised on 23 February 1995 along with the Singapore Government's accession to the Paris Convention, The Patent Cooperation Treaty (PCT), and The Budapest Treaty. This revised patent system has two main points, namely self-assessment and existing resources optimization by implementing regulations that are favorable to patent applicants in terms of both cost and labor (Chng, 2002; Roughead et al., 2018).

In 2013, the Singapore government launched the Intellectual Property Hub Master Plan, which is a 10-year planning map to make Singapore a prime location for registering, maintaining, and protecting intellectual property. As part of the plan, the Singapore government proposes the introduction of the IP-Box Tax regime as implemented by the Netherlands and Ireland. The Singapore government encourages the development and registration of intellectual property by providing generous financial incentives and tax provisions that benefit society. An example is the Market Readiness Assistance (MRA) offered by International Enterprise Singapore to help finance Singapore-based companies expanding outside of Singapore. This program provides funding of up to 70% of the registration fee for eligible intellectual property-related activities. Funding has been limited to \$ 20,000 per company from April 1, 2020, to March 31, 2023, including for intellectual property registrations from outside Singapore (Corporate Services, 2019).

The Intellectual Property Office of Singapore (IPOS) is a legal entity under the Ministry of Law that was formed in 2001 to enforce policies in the field of intellectual property. IPOS helps inventors, entrepreneurs, and business people to create, protect, and capitalize on innovation. Regarding patent rights, inventors can register patent

rights in person or online. IPOS provides intellectual property-related services such as providing lawyers, consultants, and providing free seminars. In the event of a dispute or problem during the registration process, IPOS also provides mediation services to resolve the dispute (Intellectual Property Office of Singapore, 2020). Apart from encouraging the development of intellectual property, the Singapore government is also aggressively defending existing intellectual property rights. Intellectual property rights are territorial, which means that if intellectual property is registered in Singapore, these rights will generally be retained in Singapore. The Singapore government considers the ability to resolve disputes fairly and efficiently to attract more intellectual property development and registration, which in turn can boost Singapore's economy. Therefore, the Singapore government implements a dispute resolution system through the Litigation and Non-Litigation. Laws developed by Parliament and Judges are also drafted with the attention and consideration of protection of intellectual property rights.

The legal system in Singapore has an excellent international reputation for neutrality, efficiency, and transparency. In 2002, Singapore established a Special Intellectual Property Court to handle increasingly complex intellectual property cases. In 2010, Singapore established the WIPO Arbitration and Mediation Center, which is the only WIPO Arbitration and Mediation Center other than Geneva. The collaboration between the Intellectual Property Office of Singapore (IPOS) and WIPO enables the parties to resolve intellectual property disputes without going through lengthy court proceedings and wasting time and money on the parties involved. Also, The IP Academy of Singapore offers a Postgraduate Certificate Program in intellectual property law and ensures that Singapore has lawyers and legal experts who are trained to deal with intellectual property matters (Intellectual Property Office of Singapore, 2020).

Singapore provides a comprehensive legal framework and adequate supporting infrastructure to protect patents, copyrights, trademarks, and other types of intellectual property. Patent protection arrangements in Singapore are governed by the Patents Act which is based on the British Patent Act 1977. Singapore patents are protected internationally under the Patent Cooperation Treaty (PCT). A patent is valid for 20 years, as long as the patent holder pays an annual renewal fee. After the patent is registered, the inventor or patent holder can use, sell, or license the patent. As stated in Article 13 Paragraph (1) Patents Act (Chapter 221) regarding Patentable inventions, an invention can be patented if the invention is new, inventive, and can be applied in industry. Patents will not be granted if the invention violates public order, or is related to the diagnosis of animal and/or human body care.

After revised Patent regulations, patent applicants no longer need to apply for patents through the UK. Patents can be registered by filing a domestic application, or

filing an international application. Domestic applications can only be submitted by applicants to the Registry of Patents which is part of the IPOS, in person or online (Intellectual Property Office of Singapore, 2020). Meanwhile, international applications are submitted by applicants to several countries under the Patent Cooperation Treaty (PCT) through the Singapore Patent Registration Office as the receiving office. Regarding patent infringement, the court will determine by comparing the product or process of an invention. An activity will not be considered an offense if it is carried out in private for non-commercial purposes, is carried out for experimental purposes, or is related to the manufacture of drugs. If a violation is found in an invention product or in the process of making an invention, the court can impose sanctions (Chng, 2002).

Article 19 of the Singapore Patents Act (Chapter 221) regarding Right to Apply for and Obtain Patent reads:

Right to apply for and obtain patent: (1) Any person may make an application for a patent either alone or jointly with another; (2) A patent for an invention may be granted- a) Primarily to the inventor or joint inventors; b) In preference to paragraph (a), to any person or persons who, by virtue of any enactment or rule of law, or any foreign law or treaty or international convention, or by virtue of an enforceable term of any agreement entered into with the inventor before the making of the invention, was or were at the time of the making of the invention entitled to the whole of the property in it (other than equitable interests) in Singapore; or c) In any event, to the successor or successors in title of any person or persons mentioned in paragraph (a) or (b) or any person so mentioned and the successor or successors in title of another person so mentioned, and to no other person; and (3) Except so far the contrary is established, a person who makes an application for a patent shall be taken to be the person who is entitled under subsection (2) to be granted a patent and 2 or more persons who make such an application jointly shall be taken to be the person entitled. (Singapore Statutes Online, 2005).

Article 19 states that every person has the right to apply for a patent, either alone or together with other people. A patent for an invention can also be granted by an inventor to another party based on legal regulations, foreign treaties or international conventions, or based on the applicable provisions of an agreement made with the inventor. Unless otherwise stipulated, the person filing a patent application is deemed an inventor or person entitled to hold the patent rights as stated in paragraph (2), and if there are 2 or more people who file a patent application, then 2 or more people also get the patent right.

The Patent Registrar has the ultimate control over patent registration. Under the Patent Registrar, there will be Deputy Registrars of Patents who also have the powers and functions of the Registrar under the Patent Law. The Patent Registrar will determine whether a patent applicant is entitled to obtain patent rights. After that, the patent applicant will be given a filing date and must file a claim within 12 (twelve) months after the filing date. If the applicant does not submit a claim within that time, then the application will be considered void. After the applicant has been informed

with the filing date, made a claim, and paid the necessary fees, the next procedure is a formal requirement examination to determine whether the patent meets the minimum requirements (Singapore Statutes Online, 2005).

The next procedure is a substantive examination and the applicant can choose between three routes, namely the local route, the foreign route, and the mixed route. The local route allows the applicant to apply to the Registry in Singapore. The applicant can choose to register for the examination and testing of an invention that will be patented separately or in combination. Subsequently, the Registry will process the applicant's request to the Australian patent office or the Austrian patent office in collaboration with Singapore. In the examination and testing process carried out under this route, all interests and correspondence between the applicant and examiner will be bridged by the Registry. The second route is the foreign route, which allows applicants from abroad to carry out investigations and substantive tests under the same Registry as the first route. Meanwhile, the third route is the Mixed Route, which allows applicants who have obtained the results of the invention inspection but wish to continue the testing process in Singapore through the same Registry as the first route.

After going through the examination and testing process and the invention has been patented, the Registry will announce the publication of Patent Journals A and B which will be published at the same time and made every month. The publication of Patent A Journal discloses bibliographic information in the form of registration numbers, filing dates, and patent certificates or licenses. Subsequently, the publication of Patent Journal B will reveal abstracts and drawings of the patented invention. The term of patent protection is 20 years from the filing date, and patent holders are required to pay an annual renewal fee. Intellectual Property is often exploited in various ways, such as piracy and others. Intellectual Property Statutes allow exclusive rights to be licensed or granted separately. There is a fundamental difference between granting patent licenses and transferring patents. Patent transfer is the transfer of ownership of a patent right to an invention either in whole or in part, whereas patent license is granted by a patent holder to a licensee to use the invention for commercial purposes (Singapore Statutes Online, 2005).

Regarding licensing for intellectual property rights, the main requirement is to produce a written license agreement. Section 42 of The Trade Marks act (Cap 332) states explicitly that a trademark license will not be valid unless it is written and signed by the licensor. However, in contrast to the Trademark Law, the Patent Act (Cap 221) or the Patent Law does not require a license to be in any particular form. As applied by the UK, oral licensing is considered legal and enforceable. However, if the license is not carried out within 1 year of the agreement, Section 6 (e) Civil Law Act (Cap 43) or Civil Law stipulates the requirement that a license agreement must be carried out in a written manner and accompanied by a signature.

After a patent is granted under Section 30 of the Patents Act (Chapter 221), the patent holder has a right to initiate legal action against any party who has infringed his patent. Patents and patent protection are territorial, meaning that patent holders may only claim valid patent infringement in the country where the patent is registered. Under Section 66 (1) of the Patents Act, an act that constitutes an infringement is an act committed without the consent of the patent owner. Furthermore, Section 66 (2) of the Patents Act also provides exemptions for acts that are not considered violations, namely: 1). Actions taken privately and non-commercially, 2). Actions aimed at experiment, 3) Actions aimed at marketing pharmaceutical products outside Singapore, and 4) Parallel imports of original products. "Parallel Import" refers to products that are made outside of Singapore, by or under a license from a patent owner in that country, and imported into Singapore for sale.

To determine whether an act constitutes a patent infringement, the court will determine the scope of the patent and the main features of the patent, then compare it with the product or allegedly infringing process features. If the allegedly infringing product or process feature falls within the scope of the protection provided by the patent, the court will decide that the act constitutes a patent infringement. Based on Section 67 (1) of the Patents Act, there are several legal remedies in connection with patent infringement, namely: (1) Order to stop an infringer from committing an act of patent infringement, (2) An order to destroy a product that violates a patent, (3) Repair losses incurred due to violations (Singapore Legal Advice, 2019).

In recent years, there has been an increase in patent litigation in Singapore due to the speed and quality of transparent court decisions, and relatively low fees. Since the enactment of the Patents Act in Singapore in 1995, law enforcement in the field of patents has grown stronger. It should be noted that the patent registration system in Singapore uses the Self-Assessment system and the fact that no refusals are allowed during the filing of patent applications in Singapore sets patent litigation in Singapore apart from other jurisdictions (Singapore Legal Advice, 2019). The path of litigation or settlement of patent disputes through courts includes patent revocation, patent infringement, as well as additional issues such as claims for non-infringement declarations, threats of unfounded infringement, and other issues. Besides, there are also non-litigation channels or alternative dispute resolution through mediation and arbitration.

The patent revocation process can only be done at the Patent Office, namely the Intellectual Property Office of Singapore (IPOS). The revocation process as a defense against a violation lawsuit can be carried out at the High Court. During the revocation process before IPOS, patent holders can be accompanied or represented by lawyers or legal experts in the field of patents (Intellectual Property Office of Singapore, 2020). However, during the trial process at the High Court, it can only be accompanied by a lawyer. The basis for patent revocation in Singapore is set out in Section 80 (1) Patents

Act (Chapter 221), where anyone can apply for patent revocation for the following reasons: (1) Patented invention is not a new invention, has an inventive step, and cannot be applied in industry, (2) A patent is granted to a person who is not entitled to the patent, (3) The patent specification does not clearly and completely disclose the invention, (4) What is disclosed in the patent specification is different from the actual situation, (5) The protection provided to the patent has been extended with amendments that should not be permitted, (6) The patent is obtained fraudulently or is obtained with misrepresentation, (7) The applicant does not notify or provide false information to the Registrar of details suitable for international registration.

Furthermore, the IPOS Registrar at its initiative is entitled and has the power to revoke the patent if the patent holder violates the provisions that have been previously mentioned. In this case, as stipulated in Section 81 Patents Act (Chapter 221), it is the obligation of the Registrar to provide the opportunity for the patent recipient to make observations and/or change the patent specifications to exclude the subject matter which is deemed infringement. So, for the trademark registration process in Singapore, see the Intellectual Property Office of Singapore (IPOS), which briefly consists of 4 steps, namely Application; Examination; Publication; and Issuance of registration certificate. *Abi Jam'an kurnia is Trademark Registration in Singapore and Malaysia* (Kurnia, 2018), where the source of patent law in Singapore is the Patents Act (Cap 221) which is based on the UK Patents Act 1977. Then registration formalities can be obtained in two ways, namely through domestic applications that are filed to the Registry of Patents at the Intellectual Property Office of Singapore (IPOS), or through an international application filed under the Patent Cooperation Treaty, where the Registration Office acts as the Office of the Recipient of the application for registration. In Singapore, patent protection has a maximum period of 20 years from the date of application and will be in the public domain after that period has expired. The forms of legal remedies that can be determined by the Court in the case of infringement include the determination, either for compensation or the calculation of the benefits of the order to hand over and / or destroy goods that violate the registered patent and a statement that the patent is valid and has been violated.

Application of Patent Protection Laws in Hong Kong

The legal basis for patents in Hong Kong is regulated in Patents Ordinance (Cap.154), Patents (Designation of Patent Offices) Notices (Cap.514A), Patents (Transitional Arrangement) Rules (Cap.514B), Patents (General) Rules (Cap .514C), The Registration of Patents Ordinance (Cap 42), and jurisprudence. The patent system in Hong Kong uses a re-registration system. It should be noted that the existence of the 'One Country, Two Country' system does not make the patent system in China affect the patent system in Hong Kong, and vice versa.

Patents are obtained through a two-stage application process, with the first stage requiring an application to file pending applications in the UK, Europe, or China (Intellectual Property Department: The Government of the Hong Kong Special Administrative Region, 2004). In other words, a standard patent application in Hong Kong cannot be filed if there is no patent application in the UK, Europe, or China. A second stage is submitted when applications destined for the UK, Europe, and China are received. For example, if the application in the first stage is directed to the UK, then the patent directed to China cannot be used in the second stage even though both are intended for the same invention (Mak, 2019).

The term for standard patent protection in Hong Kong is 20 years from the date the application is filed in the UK, Europe, or China. Patents based on Chinese Patents will be named “CN-Based Hong Kong Patent” likewise Patents based on British Patents will be named “UK-Based Hong Kong Application” and so on. Apart from standard patents, there are also what are called short-term patents. Short-term patents have an eight-year period from the filing date and have rights equivalent to standard patents. Short-term patents will not undergo substantive examination but it will still be issued by the Hong Kong Patents Registry if all the formal requirements have been met.

A person can apply for a short-term patent if he wants to get the patent rights sooner than he should, for example for advertising purposes. Unlike in China or Germany, a short-term patent in Hong Kong can be assigned to any invention, including methods, chemical compounds, and chemical compositions (Sun, 2003). In addition, short-term patents are usually granted within 6 (six) months to 18 (eighteen) months from the filing date. Short-term patents also do not need to be filed through the UK, Europe, or China, but can be filed directly in Hong Kong. The rights obtained by short-term patent holders are the same as rights obtained by standard patent holders. The Patent Law in Hong Kong also allows the same patent holder to have a short-term patent and a standard patent at the same time as provided for in Section 91 (1) (h) of the Ordinance.

On December 19, 2019, The Hong Kong Intellectual Property Department (IPD) launched a new type of patent and implemented several changes to the Hong Kong patent system. Meanwhile, the existing system regarding patent re-registration through the UK, Europe, and China was maintained. These changes are implemented by the Patents (Amendment) Ordinance 2016 and Patents (General) (Amendment) Rules 2019. The changes include: (1) Introduction of the ‘Original Patent Grant’ system for direct filings of standard patent applications in Hong Kong, (2) Substantive examination procedures for short-term patents in Hong Kong, (3) Restriction on the use of certain rights by individuals to supply patent agent services in Hong Kong.

The existence of patents can give inventors the advantage of exclusive rights. An invention can be patented if the invention is new, has an inventive step, and can be

applied in industry. Patents in Hong Kong are territorial (Sun, 2003). Therefore, patents registered with The State Intellectual Property Office of the People's Republic of China or patent registrations in other regions do not automatically receive protection in Hong Kong. Patent protection in Hong Kong requires registration under The Patents Ordinance (Chapter 514) and The Patents (General) Rules (Chapter 514C) of Hong Kong.

To register a patent, an applicant must complete an application form and fill in an address for services in Hong Kong, then submit it to the Patents Registry (the "Registry") of the Intellectual Property Patents. The application fee for each stage includes an application fee of HK \$ 380 and an advertising fee of HK \$ 68, while for short-term patents there is an application fee of HK \$ 755 and an advertising fee of HK \$ 68. The granting of standard patents in Hong Kong is obtained through one of three patent offices, namely: (1) The State of Intellectual Property Office, People's Republic of China, (2) The European Patent Office, and (3) The United Kingdom Patent Office.

After a patent application is filed, the next process is the examination stage. The receipt date, testing, and subsequent publication of the patent application will be examined. If there are no deficiencies found, and the submitted invention has met all requirements, the patent application received will be registered and published by the Registry (Matthews, 2020). The entire process may take three months from the date of receipt. The notification and publication will be published in the Hong Kong Intellectual Property Journal (<http://www.ipd.gov.hk>) as well as patent transfer certificates or short-term patent applications. In general, short-term patent certificates will be issued within three months of the filed application. The patent owner can file a civil suit if there is a violation that occurs after the patent award certificate is issued.

Regarding patent infringement, the patent was initially applied to the Court of First Instance (CFI). Hong Kong does not have a specific patent court, and most judges have no expertise in patent law. Therefore, in any process before the CFI that involves a patent application, the Patent Registrar must attend or represent the parties. This is set out in Section 131 Patents Ordinance.

Patent revocation is handled by the court and the patent office. The patent office only handles patent revocation because the patent or the process of making the invention is contrary to public order or morality. Lawyers in Hong Kong are divided into 'Barristers', namely attorneys-defenders, and 'Solicitors', namely lawyer-consulting. In patent disputes, solicitors can accompany court proceedings or litigation lines, while barristers usually make direct court proceedings. Barristers have full hearing rights in all courts, whereas solicitors only have limited hearing rights in court. Most patent attorneys choose non-litigation before entering court, and patent attorneys can assist litigants. However, patent attorneys cannot represent parties before a court of law unless they also qualify as solicitors or barristers (Koo & Fitzgerald, n.d.). Based

on the description above, the sources of patent protection law in Hong Kong are Patents Ordinance (Cap.154), Patents (Designation of Patent Office) Notices (Cap.514A), Patents (Transitional Arrangement) Rules (Cap.514B), Patent Rules (General) (Cap. 514C), and the Patent Registration Ordinance (Stamp 42). The term for standard patent protection in Hong Kong is 20 years from the date the application is filed in the UK, Europe or China. Regarding patent infringement lawsuits, it can be filed through litigation by filing it with the Court of First Instance (CFI), because Hong Kong does not have a special patent court, and most of the judges do not have expertise in patent law.

CONCLUSION

Indonesia, Singapore, and Hong Kong are the countries that participated in ratifying the Convention on the Establishment of the World Trade Organization (World Trade Organization) which includes agreements on Trade Related Aspects of Intellectual Property Rights (TRIPs) so they are required to comply with and implement the contents of these international agreements. The application of patent laws in Indonesia, Singapore, and Hong Kong has several significant similarities and differences. These three countries have almost the same definition of a patent, namely the exclusive right granted by the state to an inventor as a reward for work in the field of intellectual property. The inventor has exclusive rights, economic rights, and moral rights. Patent registration in Indonesia, Singapore, and Hong Kong have the same procedure, namely fulfilling the formal requirements, substantive examination, then the announcement stage. The term of patent protection in Indonesia and Singapore is similar, which is 20 years from the date of filing. However, it is different from Hong Kong, namely from the date of filing. In patent disputes, there are two ways of settlement, namely litigation and non-litigation. Patents in Indonesia, Singapore, and Hong Kong have another similarity in that they are transferable and can be licensed. These three countries have the same basis, namely TRIPs, but their application in each country can be different. The development of sophisticated technology and the influence of technology has a tremendous impact on a country. The governments must focus on developing technology in their respective countries, protecting patents, and enforcing existing patent laws. It is also important for a country to implement legal regulations that are beneficial to society to spur people's desire to create more new inventions in technology. The governments also have to provide legal certainty and a sense of security to inventors who have contributed to creating beneficial technology for the state. The results of this research are expected to contribute to the science of patent rights. The focus of this research is only to compare the application of patent law and not to examine its strengths and weaknesses, so it is considered important to do further research on this matter.

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