

THE EFFECT OF PATENT RIGHTS ON INNOVATION OF THE TECHNOLOGY INDUSTRY IN INDONESIA

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Abstract: Advances in technology have a significant impact on the development of today's industry. As is well known, the world is currently trying to develop the concept of the Industrial Revolution 5.0. Technological developments are directed at increasing the quality of mastery and utilization of technology in order to support the transformation of the national economy towards an economy based on competitive advantage. The role of technology is a major concern in developed countries in responding to the problems of nation building and increasing economic growth. In various developed countries, economic policies and technological policies are increasingly integrated and harmonized to increase national competitiveness. The higher the innovation competence in a country is evidenced by the large percentage of the number of patents produced. Innovation competence signifies the implementation of research and development (R&D) activities involving the interaction of elements of the innovation system (universities, R&D institutions, and industry) in the country concerned. Examining patent instruments, both primary and secondary aspects are inseparable from the type of innovation activity. In its nature, innovation is more incremental and various innovations are closely related in producing a product that has economic value, innovators prefer patents as a secondary tool. It is shown that patented instruments play a role in promoting diffusion activity.

Keyword: Patent Rights; Technology; Innovation; Industry

INTRODUCTION

Advances in technology have a significant impact on the development of today's industry (Prasetyo, 2018). As is well known, (Haqqi & Wijayati, 2019) the world is currently trying to develop the concept of the Industrial Revolution 5.0. This concept combines technology and humans by using a system that will be more adaptive and responsive to any changes in the production environment (Fonna, 2019). Therefore, it can be said that the Industrial Revolution 5.0 will focus on the integration of sophisticated technologies such as Artificial Intelligence ("AI"), Internet of Things ("IoT"), as well as technological robots with human expertise (Hendra Fridolin Ananda Sudater Siagian, 2023). (Edu, 2021) Indonesia is one of the countries that has followed developments in technological progress. This can be seen from the increasing number of facilities for Micro, Small and Medium Enterprises ("MSMEs") to protect the intellectual property of their products, whether in the form of brands, patents, copyrights, or industrial designs. The form of convenience provided is in the form of fee waivers for registering intellectual property (Sulasno et al., 2019). The protection of intellectual property that is very appropriate for business actors who are developing businesses in the technology sector is patents (Nugroho, 2015). The existence of a patent is very important for inventors and patent holders because it can motivate inventors to increase their work, both in quantity and quality to encourage the welfare of the nation and state and create a healthy business climate. Technological developments are directed at increasing

the quality of mastery and utilization of technology in order to support the transformation of the national economy towards an economy based on competitive advantage (Indonesia, 2020). The role of technology is a major concern in developed countries in responding to the problems of nation building and increasing economic growth (Nurkholis, 2013). In various developed countries, economic policies and technological policies are increasingly integrated and harmonized to increase national competitiveness.

MATERIALS AND METHODS

This research method uses normative legal research methods (Purwati, 2020), based on written regulations and other literature that examines aspects of theory, structure, and legal explanations related to this research. The data obtained from writing this journal is secondary data obtained from literature studies.

RESULTS AND DISCUSSION

Definition

Patents are exclusive rights granted by the state to inventors for their inventions in the field of technology, who for a certain period carry out their own inventions or give their approval to other parties to carry them out (Muhammad, 2014).

Based on the above understanding of a patent, it is known that a patent contains the terms invention and inventor. Invention is an inventor's idea that is translated into a specific problem-solving activity in the field of technology which can be in the form of a product or process, or improvement and development of a product or process. Then what is meant by

an Inventor or a patent holder is a person or several people who carry out an idea that is poured into an activity that produces an Invention.

Inventors or patent holders have been given protection based on national law as well as international law as a party that has priority rights to implement it alone or jointly with their Invention or authorize others to implement it (Purwaningsih & Ariyanti, 2021).

Legal basis

Patents in Indonesia were initially regulated through Law Number 14 of 2001 concerning Patents, then amended by Law Number 13 of 2016 concerning Patents ("Patent Law"). Furthermore, since the enactment of Law Number 11 of 2020 concerning Job Creation (UU CK), patents are also included in the CK Law, namely in Article 20 of the CK Law (Edu, 2021).

Patent Terms

When an Invention wants to be patented, it is necessary to fulfill several requirements, this is because not all inventions can be patented (Rahmadhani et al., 2021). The following conditions must be met if an invention wishes to obtain a patent:

1. Having a New Nature (Novelty)

An invention for which a patent is to be registered must be an invention that has never been published beforehand. This is because an Invention must be new in nature and not preceded by previous

knowledge or skills (*prior art*).

2. Contains Inventive Steps

An invention contains an inventive step if the invention is something that cannot be foreseen for someone who has certain expertise in the technical field (*non-obvious*).

3. Has Applicative Properties

The requirement must have an applicable nature so that the invention or work can be carried out repeatedly, or it can be said that the invention or work must have a high level of benefit.

Patent Type

1. Ordinary Patent

An ordinary patent is a patent granted to an invention as well as to an invention which contains an inventive method and can be applied in industry. Inventions that can be registered for ordinary types of patents are: substantive related checks will pass if they comply with the provisions of Articles 2, 3, 5, 7 of the Patent Law;

2. Simple patent

Simple patents are granted for each invention, improvement of an existing product or process, and can be applied in industry.

There is a difference between ordinary patents and simple patents as stated in the Patent Law. The following table contains a comparison of the differences between ordinary patents and simple patents:

Table 1. Differences between Ordinary Patents and Simple Patents

Ordinary Patent	Simple patent
The technology of the Invention is included in the difficult category.	The technology of the invention is simpler which emphasizes a practical role.

Ordinary Patent	Simple patent
It is an invention in the form of products and processes	It is an invention in the form of a real product (product).
Material requirements that need to be new, there are inventive ways and are applied in industry and are not counted as the invention in Article 7.	The requirements for the invention are simple materials that are new and can be applied in industry.
Substantive related checks will only pass if the invention complies with the provisions of Articles 2, 3, 5, 7 of the Patent Law.	Checks regarding the substantive of the Invention only include: <ul style="list-style-type: none"> - novelty value; And - can be applied.
To carry out a substantive check must submit a request for a "substantive check".	To carry out a substantive check, it can be done to coincide with the submission of the request or at the latest 6 (six) months from the date of acceptance.
Can be suggested to be a mandatory license.	Cannot be suggested to be a mandatory license.
The term is 20 (twenty) years from the date of acceptance.	The term is 10 (ten) years from the date of acceptance.

The Effect of Patents on Innovation in the Technology Industry

Patents are an indicator of the implementation of the National Innovation System (SIN) in the economic sector. The higher the innovation competence in a country is evidenced by the large percentage of the number of patents produced. This innovation competence indicates the implementation of research and development (R&D) activities involving the interaction of elements of the innovation system (universities, R&D institutions, and industry) in the country concerned. In Indonesia, there are many inhibiting factors that cause patent instruments to not be optimal in

supporting product competitiveness, such as low public awareness of the importance of patents and various issues regarding IPR infringement.

By involving adjustments to innovation policies on a larger scale, innovation policies can be seen as more appropriate in placing patents as an instrument to encourage innovation activity. Based on the current thinking of economists, patents can be used to encourage innovation at the micro level as a policy instrument. Placing patent policies to encourage innovation activities together with the SIN framework is expected to be able to provide results of studies on the effective utilization of patent policies in

encouraging innovation activities in Indonesia.

From the perspective of government functions, democratic government or good governance (Pierre & Peters, 2000) refers to the ability of the government to make various policies and instruments to achieve public participation and its responsibility and authority to maintain order and create order and a conducive climate in society (Octavia, 2022). Innovation in the micro sector requires a comprehensive policy regarding the interaction of actors in the innovation system. Government is one element of the innovation system. The government's role is bound both by patent policy in relation to innovation activities in Indonesia in applying the concept of good governance with all its authority, and by direct participation in encouraging the country's innovation activities through government R&D institutions. Regarding patent policy as a tool to encourage innovation activity, the government has a direct interest in implementing the concept of good governance in this field.

Examining aspects of patents in the stimulus of innovation activity is closely related to various industrial characteristics. Patent instruments are critical to driving innovation in the pharmaceutical, engineering, biotechnology, and computer industries. It was shown in surveys conducted in European countries, the United States and Japan in the mid-1980s and 1990s that in protecting innovation activities in these industrial sectors, a patent instrument is very important. In addition, patents become a secondary instrument in protecting R&D activities and

innovations carried out in several other types of industries.

Examining patent instruments, both primary and secondary aspects are inseparable from the type of innovation activity. In its nature, innovation is more incremental and various innovations are closely related in producing a product that has economic value, innovators prefer patents as a secondary tool. If this happens, the patent instrument is more supportive of publication compared to the secrecy method in protecting invention products.

Related to competition and innovation activities, patent instruments have a positive side to this. It is shown that patented instruments play a role in promoting diffusion activity (Jatmika et al., 2019). By registering a patent, invention products can disclose information related to the relevant invention product.

Another impact of patent instruments on technology development activities is related to technology transfer activities. Arora et al. (2001) and Vonortas (2003) stated that patent instruments can facilitate various transactions in the technology market. Various technology products can be traded as assets through licensing agreements. In this case, the buyer can use the invention product to pay fees or royalties (Kardoyo et al., 2011).

In the last two decades, the patent system has undergone major changes, mainly by strengthening patent protection, strengthening the exclusive rights of patent owners and expanding the scope of patent rules and facilitating their enforcement. This change occurred in many countries with the harmonization of the international patent system. It is based on the view that

strengthening patents encourages innovation. The patent system has undergone major changes in the United States, Japan and Europe according to the OECD (2004) including: 1) *Extended coverage of intellectual property protection*. Areas partially or completely that are subject to patents include business methods, software, and although there are differences in some countries, there are inventions closed to basic science. 2) *Patents confer broader protection, especially in new areas*. Ownership of a new field patent will cover more than the invention or invention of the inventor. Some patent policy practices in new areas allow broader protection to cover a wider area of a patent application that was not known at the time the patent application was filed. 3) *Filing procedures are increasingly flexible and less costly, notably at the international level*. Several mechanisms in patent office storage and examination procedures, such as the introduction of the Patent Cooperation Treaty (PCT) system, are modifications of patent applications whereby the first inventor/inventor owns a patent for a longer period of time in another country. 4) *The rights of patent holders are more frequently and strongly enforced in court*. Since the creation of the Court of Appeals for the Federal Circuit (CAFC) in 1982, the percentage of patents that are invalid by court in the United States has substantially decreased. Efforts to create special patent courts continue in other territories. The rules are expected to take effect in Japan next year, creating specialized IPR courts and implementing centralized patent system legislation in Europe. 5) *Restrictions*

on the exemption for research use. Recent developments prove that the application of exempt research may increase patent restrictions in the future.

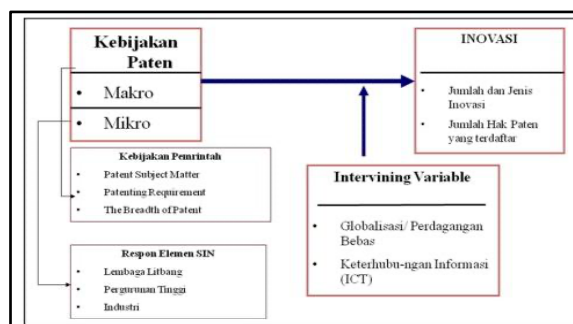
In 2002, the CAFC pointed out that there are exceptions made to patent research in the United States when the research is done for fun, curiosity, or for philosophical inquiry. In connection with the development of globalization and free trade as well as the phenomenon of increasing competition and innovation, the OECD (2004) states that the influencing factors are (Prihadyanti & Laksani, 2015); 1) *Innovation is central to business strategy*. Research and development activities as well as innovation are a source of competitive advantage in a common understanding for industry players from various sectors. 2) *Globalization of innovation processes*. There has been a change in investment patterns globally due to the impact of globalization. This also occurs in R&D activities that are closer to market locations and sources of science and technology. 3) *The expansion of ICT and the Internet*. The development of information and communication technology (ICT) has contributed to the availability of access to information regarding technological resources. Regarding new innovations, information related to product innovations can quickly be accessed by the market. Patent instruments in this case are needed to protect innovation activities for innovative industrial players. 4) *New technology-based firms play an important role*. In terms of activity development of new *technology-based firms*, Patents are very important for this type of company because they often

find a lack of their assets in the form of intellectual property; And 5) *Greater collaboration*. Driven by developments in process and product technology, increased competition, rapid technological changes, as well as high costs and risks of innovation activities to force industry players to engage in activities in the scope of networking and collaboration.

From an economic perspective, patents have a positive impact on innovation activities with limited monopoly rights. This is an ongoing incentive for inventors to allocate funds and pay attention to the importance of R&D activities in creating a competitive advantage. As for the impact on other industry players, encourage them to carry out and place R&D activities as a framework for increasing competitiveness in the market through patent policies. Assessing the direction of patent policy towards the development of micro actors' innovation activities is very complex. Placing a patent policy on innovation activities carried out based on the policies and activities of an internal organization will differ from one another. Examining the methods adopted by innovators in protecting the activities and R&D carried out cannot be separated from various

methods profiting *innovation*, both formal and informal methods. Seeing this, patents are used as a formal instrument of appropriability, while the informal method that is often used depends on the strength and weakness of the patent regime in a country.

In general, in addition to formal mechanisms, innovators utilize appropriate mechanisms according to the nature of knowledge (tacit and codified), human resource management (communication) and (immobility), practical and technical instruments (*password, secrecy, access restriction*, and so on), as well as lead time which includes market entry, continuous development, and others. In certain cases these informal appropriability mechanisms become instruments for innovators in placing patent instruments as a form of formal instrument to become a secondary instrument. In this regard, various forms of informal appropriability mechanisms are taken into consideration in looking at the relationship between the declining response of innovators to patents in protecting innovation activities. According to this theory, a framework emerges that can be used as an analysis of patent policy in Indonesia regarding the role of supporting innovation.



Source: Figure 1.1 Research Analysis Framework

Figure 1.1 shows that the importance of patent and innovation policies is based on two factors. 1) The macro setting of patent policy in Indonesia, and 2) Factors that support the SIN component in carrying out innovation and/or the perspective and response of patent instruments. In this case, it examines the backdrop of an economic view that values patents as an incentive scheme in encouraging innovation. It is proven in cases that occurred in several developed countries that patent policies are effective in encouraging innovation (Kardoyo et al., 2011).

In Indonesia itself, regarding patent policies in increasing innovation, the Directorate General of IP consistently conducts thorough socialization throughout the country, assists and supports research and R&D results, maximally empowers facilities for MSME, Higher Education and R&D inventions. Furthermore, the Indonesian Patent Policy has also made new innovations in accelerating patents for the needs of the community, publication, and online patent registration services have been running well and are equipped with virtual counters. This can be accessed through the website paten.dgip.go.id.

With this policy, it is expected to increase the percentage of patent registrations by being encouraged by SIN components (R&D institutions, universities, and industry) in order to create quality inventions and be able to appreciate patents more in encouraging innovation.

CONCLUSION

Based on the results and discussion

of the Research, it can be concluded that The higher the innovation competence in a country is evidenced by the large percentage of the number of patents produced. Innovation competence signifies the implementation of research and development (R&D) activities involving the interaction of elements of the innovation system (universities, R&D institutions, and industry) in the country concerned. By involving adjustments to innovation policies on a larger scale, innovation policies can be seen as more appropriate in placing patents as an instrument to encourage innovation activities. Placing patent policies to encourage innovation activities together with the SIN framework is expected to be able to provide results of studies on the effective utilization of patent policies in encouraging innovation activities in Indonesia.

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