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THE RIGHT TO REGULATE PADA BITS ANTARA INDONESIA DENGAN SINGAPURA 2018

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Abstrak

Penulisan ini mengkaji permasalahan industri manufaktur yang sedang berkembang, yang dipengaruhi oleh kemajuan teknologi seperti 3D *Printing*. Dalam beberapa tahun terakhir, adanya teknologi 3D *Printing* telah merevolusi sektor manufaktur, yang dapat memungkinkan individu untuk memproduksi produk dari rumah. Adapun kemajuan teknologi tersebut menimbulkan tantangan signifikan bagi pemegang Hak Kekayaan Intelektual, termasuk Hak Cipta, Desain Industri, dan Paten. Hal ini dikarenakan adanya teknologi tersebut memungkinkan produksi ilegal melalui 3D *Printing* yang semakin terjangkau. Menanggapi permasalahan ini, Sistem Manajemen Digital (DRM) menawarkan solusi untuk mengurangi risiko pembajakan data model 3D. DRM mencakup berbagai rezim perlindungan HKI. Penulisan ini memberikan gambaran umum mengenai perlindungan DRM dan keadaannya di Indonesia. Berdasarkan metode penelitian yuridis normatif, dapat ditemukan bahwa Indonesia belum memiliki regulasi terkait DRM yang Komprehensif, yang dapat menyebabkan penegakan hukum yang tidak efektif. Meskipun Indonesia memiliki pendekatan yang bersifat komunal terhadap hak kepemilikan, terdapat kebutuhan yang mendesak untuk regulasi mengenai DRM untuk melindungi HKI secara memadai dalam konteks 3D *Printing*.
Kata Kunci: Hukum, Investasi, Bits, Hak Untuk Mengatur, Indonesia Dan Singapura.

Abstract

This paper examines the issue of the growing manufacturing industry, which is influenced by technological advancements such as 3D printing. In recent years, the existence of 3D Printing technology has revolutionized the manufacturing sector, which can enable individuals to manufacture products from home. Such technological advancements pose significant challenges to holders of Intellectual Property Rights, including Copyrights, Industrial Designs, and Patents. This is because the technology enables illegal production through 3D printing that is increasingly affordable. In response to this problem, Digital Management Systems (DRM) offer a solution to reduce the risk of 3D model data piracy. DRM encompasses various IPR protection regimes. This paper provides an overview of DRM protection and its state in Indonesia. Based on the normative juridical research method, it can be found that Indonesia does not yet have a comprehensive DRM-related regulation, which may lead to ineffective law enforcement. Although Indonesia has a communal approach to property rights, there is an urgent need for DRM regulations to adequately protect IPR in the context of 3D printing.
Keywords: *3d Printing, Intellectual Property Rights, Digital Rights Management, Normative Juridical.*

INTRODUCTION

In the process of commercialization or manufacturing, there are several processes of producing an item, including the research and development process and the production process. There is a value contained in the design and function of an item obtained at the Research and Development stage as well as the design of the item itself. This is what is then protected by Intellectual Property Rights, be it through the protection of Copyright, Industrial Design, or Patent Rights. Both patents and industrial designs are a way to protect the exclusive rights of the patent owner so that an item or technology is not reproduced without the permission of the patent owner, as well as industrial designs.

As time progressed, there were methods that emerged related to how to produce goods, especially with the Industrial Revolution. During the industrial revolution, namely in the 18th century, many factories were born due to the emergence of inventions such as steam engines, spinning machines, and tools such as power looms that began to revolutionize the way industry worked to meet needs. The invention of these means of production directly enabled the mass production of goods. After the first industrial revolution and the emergence of the second industrial revolution, there were developments in the electrical sector, internal combustion engines, and new materials. Then after World War II, there were rapid technological innovations especially in automation, computing, and the application of robotics to factory production lines.

In addition to enabling mass production, these means of production can also produce goods that cannot be produced by home factories due to their high level of complexity and uniqueness. This makes an item have an economic value that can be enjoyed by the right holder. It is at this stage that the protection of Intellectual Property Rights becomes important. Intellectual property rights themselves in the international world are regulated in several conventions, namely the Berne Convention which regulates copyright internationally, the Paris Convention which covers patents and brands, and the TRIPS Agreement which covers the standards of protection of intellectual property rights and their enforcement globally.

Following the times, there are new innovations related to methods or ways of producing a creation or goods. In recent years, there have been several issues related to the latest technology that intersect with violations of Intellectual Property Rights. The latest technologies in question include 3D Printing, Artificial Intelligence (AI), and Blockchain. The invention of these three technologies, which is also supported by globalization, has the potential to become a threat to Intellectual Property Rights around the world.

Additive Manufacturing or 3D Printing had its foundation in the early 1980s when Dr. Hideo Kodama, a researcher at the Nagoya Municipal Industrial Research Institute, registered his patent. At the time of its inception, Additive Manufacturing was not a technology that was easily available to everyone. As for the 21st century, Additive Manufacturing entered a stage of great growth so that many companies that produce Additive Manufacturing technology began to enter the market and made 3D Printing easily accessible to the public.

With the entry of 3D Printing into the public market is one of the technological developments that greatly affects aspects of human life, the positive impact of the existence of 3D Printing that is easily accessible is the freedom of design customization that is difficult to obtain with conventional production methods, the localization of production that can reduce global supply needs and result in reduced transportation emissions. There are negative impacts resulting from the invention of 3D printing, including due to the freedom of design customization, there is a threat to Intellectual Property Rights, especially in industrial designs and patents.

The challenge for Intellectual Property Rights occurs because of the ease of replicating

something through a 3D Printer. This implies that anyone with access to a 3D model of a product can easily replicate it. In addition to challenges for Intellectual Property Rights, the replication of a product also has a significant impact on international trade if done massively. This is evidenced by research that says that trade in counterfeit or replica goods accounts for 2.5% of the global economy.

In the technology and information sector, in the era of the rise of streaming sites, whether it is streaming songs, movies, software, or other data that can be obtained via the internet, there are methods that can be utilized to secure these data, namely Digital Rights Management (DRM). This technology is a concept that has the function of controlling the access of a digital asset. In the international world, WIPO already has a framework regarding DRM regulation. Legislators in western countries such as the United States and the European Union have made comprehensive arrangements regarding DRM. In Indonesia itself, there is no specific and detailed regulation governing this matter. Whereas DRM itself is one of the important things in the protection of Intellectual Property Rights in this modern era.

From this background, the author is interested in examining the threats from the rise of 3D printing today and the urgency of a comprehensive regulation of DRM in responding to the violation of Intellectual Property Rights.

RESEARCH METHOD

This research was conducted using a normative juridical research method that uses and examines library materials and positive law. This research has a scope based on Soerjono Soekanto's ideas, one of which includes research on legal systematics and comparative law. This research can be used to find an urgency of a more complete and comprehensive regulation of DRM in Indonesia which is also accompanied by a little touch of comparison of DRM laws owned by the United States and the European Union.

This research has a research design that has a structure that can support in achieving its objectives, namely by conducting a literature review of what Additive Manufacturing is, the threat of Additive Manufacturing to Intellectual Property Rights, what Digital Rights Management (DRM) is, and DRM arrangements in Indonesia and in the United States and the EU. After conducting the literature review, there is a comprehensive analysis that can help find answers to the urgency of DRM regulations in Indonesia.

RESULTS AND DISCUSSION

Additive Manufacturing (3D Printing)

3D Printing is defined by the American Society for Testing and Materials (ASTM) as the process of combining materials to form objects that are derived from three-dimensional data models. This has a fundamental difference with the traditional way of producing goods using machines. In its development, 3D Printing has experienced a fairly rapid development which is also supported by the commercialization factor of tools that have the capacity to do 3D Printing itself.

Initially, 3D printing originated from the technology of fabricating per-layer structures directly from computer designs. It has proven to be a great innovator and opened up new opportunities and possibilities for companies to develop efficiency in production. 3D printing has a wide range of uses, especially in the medical, agricultural, automotive, aviation, and many more fields because it can not only produce prototypes of a device, but can also make finished products needed such as artificial heart pumps, 3D printed corneas, and even the iron bridge in Amsterdam using this technology.

Although 3D Printing has many uses, there are also disadvantages of the 3D Printing technology, including the technology can affect the economy through the reduction of factory workers needed in an industry, 3D Printing can also be used in making a weapon or other dangerous objects without being detected by the authorities which becomes a security

threat to the wider community, and there are losses in terms of counterfeiting an item because anyone who has a print or data on an item can easily make it without the permission of the actual design owner.

There are several types of 3D printing that are tailored to their own functions based on ASTM standards, including:

1. binder jetting;
   Involves a liquid binder to hold powdered particles together in the formation of the coating and is capable of using a wide range of materials such as metals and ceramics.
2. directed energy deposition;
   adding materials to existing components, generally used in the appliance, transportation, aviation, and oil and gas sectors with metal as the main material.
3. material extursion;
   Used for printing using various materials and colors that often involve plastic, food, or living cells.
4. material jetting;
   uses droplets of photosensitive material that harden when exposed to UV light, resulting in a precise and smooth surface.
5. powder bed fusion;
   It uses techniques such as electron beam melting and selective laser sintering. This type is known for its speed, accuracy, and wide range of uses such as making metal, plastic, and ceramic objects.
6. sheet lamination;
   Using recyclable materials, which can also produce prints with various colors, is cost-efficient and environmentally friendly.
7. vat photopolymerization;
   It produces highly detailed and high-quality products and is a commonly used technique.

It can be seen that the innovation of 3D printing technology is something that has a huge impact on the lives of modern humans. As previously explained, this technology has the potential to interfere with or threaten Intellectual Property Rights because it can produce highly detailed and potentially economically detrimental counterfeit products if they are traded or can be obtained massively in the general public.

There are two types of 3D printing ecosystems. In accordance with its development that was previously used by the manufacturing industry, along with the times the technology is also easily accessible to individuals or personal 3D Printing. So there are two types of ecosystems, namely Industrial 3D Printing and Personal 3D Printing.

In terms of Industrial 3D Printing, there were early innovations that moved towards the establishment of many money companies controlled by Europe, China, the United States, and Japan. The use of 3D printing in the industrial sector is engaged in large-scale production and applications. The development of 3D printing in the industrial sector is found more in start-up companies. The developments in this industry affect how patents are classified, for example, the United States Patent and Trademark Office has organized two Additive Manufacturing conferences since 2012 that bring together stakeholders from industry, academia, and the patent field in their discussions. The institution also collaborated with the European Patent office which created a special subclass in the Patent classification system for 3D Printing labeled B33Y. The classification is useful in categorizing patents accurately and makes it easier for inventors and examiners to classify new technologies and search for existing patents as well as prior art that can determine the novelty and originality of a new patent.

Regarding personal 3D printing, which is also developing along with industrial 3D printing, the development is supported by a large community of open source enthusiasts and many other service providers. The community inspires many developers who are generally motivated by personal needs and satisfaction as well as reputational goals for the community itself rather than financial gain.

The Threat to Intellectual Property Rights

As explained earlier, 3D Printing has two markets that can utilize the technology,

namely the industrial market and the consumer (individual) market. Both have new challenges for the world of Intellectual Property Rights protection. In the industrial sector, of course, patent protection has a very large role. This is because there is protection for 3D printer innovations, components, and processes. In addition to patents, 3D printing protection in the industrial sector also relies on the protection of trade secrets.

In the private or individual sector (consumer market), the 3D printing market has entered the realm with prices that are quite affordable by many parties. Of course, this poses a challenge to Intellectual Property Rights, especially in patent infringement. In this case, the challenge is that consumers who use 3D Printers will easily share and/or print 3D Printing model files that have the potential for patent infringement. In this case, each country has different regulations regarding the distribution of patents for individuals whether used individually or not. As for countries that prohibit the use of patents individually, it will be a challenge to enforce the law in the sense that in the process it must identify each consumer who violates the patent rights so that it will make an inefficient effect to enforce the law against such violations.

With the problem of counterfeit goods or what can be called counterfeiting, of course, it must be addressed or taken seriously. This is because the trade in counterfeit goods is a long-standing socio-economic problem that threatens public governance, business efficiency, and consumer welfare. In addition, the trade in counterfeit goods undermines economic growth by reducing business revenues and undermining incentives for innovation. In addition, a study conducted by the OECD and EUIPO found that the trade in counterfeit and/or pirated goods in 2019 alone was worth USD 464 billion or 2.5% of global trade.

From these data, it can be seen that the trade in counterfeit goods (in general) has a significant impact on international trade globally. Therefore, there is an urgency to pay attention to the problem of counterfeit goods that have new challenges through 3D printing technology and require legal solutions that follow technological developments. In the electronic and digital sector itself, there is a technology that can be utilized by Intellectual Property Rights owners, namely Digital Rights Management or DRM.

One of the prominent cases concerning 3D printing itself was the Penrose Triangle Take-Down Notice. Penrose Triangle or “the impossible object” is a visual illusion that cannot be realized as a solid object in three-dimensional space designed by Oscar Reutersvärd in the 1930s. Long story short in 2011, a digital file for a 3D printing version of the Penrose Triangle was uploaded to Thingiverse, an online platform where users can share design files for 3D printing.

In February 2011, Ulrich Schwanitz claimed copyright ownership for the 3D version of the penrose triangle and issued a takedown notice to Thingiverse stating that the posted design file infringed his copyright. This case is significant because it is the first widely reported copyright infringement that also involves 3D objects. It has legal implications that arise due to the development of 3D printing technology and methods of sharing digital design files online.

Digital Rights Management

Digital Rights Management (DRM) is a method used to control access to software, audio content, video, and other types of digital documents. This method is often used to anticipate a document from the risk of piracy. The way DRM works is that with the use of DRM, it can be determined who holds the copyright of the document and who has the right to access it. The DRM system itself is related to the management and protection of digital content that involves encryption. There are examples where DRM technology is used in securing software using a serial number or using a special account to access the data.

The existence of this technology certainly exists to answer problems caused by technological changes. Entering the era of information technology, it is increasingly difficult to make legal efforts for IPR violators due to the vast network they have. As in the emergence of sites to share pirated songs or movies. DRM in this case offers security to the distribution of electronic data. DRM is not always about methods that use technology to be applied. DRM also utilizes usage contracts and license agreements to protect digital content.

DRM has a critical role in today's digital environment. This is because many parties

are associated with intellectual property rights in a digital work. In its application, DRM uses several techniques to ensure its security, namely cryptographic techniques, authentication, base integrity, Non-Repudiation (ensuring parties cannot deny involvement in a transaction), watermarking, copyright ownership statements, and many more. These things are done to protect intellectual property rights involving digital technology.

DRM has recently become a concern for legislators around the world, with countries such as the United States and the European Union creating legal frameworks regarding DRM in their countries. The existence of this regulation is due to the fact that the DRM method itself has experienced 'hacking' before, so it is necessary to establish regulations that prohibit the evasion of DRM and the production and distribution of tools that can be used to do so.

In International Law, there are two DRM arrangements that can be found in two treaties, namely the World Intellectual Property Organization (WIPO) WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT) adopted in 1966. These two treaties establish the framework of DRM in general. In Article 11 of the WCT and Article 18 of the WPPT, it is explained that member states are obliged to provide legal protection as well as legal remedies against DRM evasion.

DRM Regulation in Indonesian Law

DRM arrangements in Indonesia itself are still very limited, namely in Articles 6 and 7 of Law Number 28 of 2014 concerning Copyright which describes Copyright management information and Copyright electronic information. Article 7 paragraphs (1) and (2) explain that

"(1) Copyright management information as referred to in Article 6 letter a includes information about:

a. a method or system that can identify the originality of the substance of the Creation and its Creator; and
b. information code and access code."

Which is then explained in paragraph (2) of the article that:

"The electronic information of the Copyright includes information regarding:

a. a Creation, which appears and is attached electronically in connection with the activity of announcing the Creation;
b. name of the creator;
c. creator as the rights holder;
d. the period and conditions of use of the Creation;
e. number; and
f. information code."

The existence of this protection under the Copyright Law is still a complaint offense, so the effectiveness of the protection is still considered poor. In addition, the relevant arrangements with the DRM are only found in the Copyright Law. This has the potential to cause problems. These problems arise because Intellectual Property Rights cover a wider range of things than just Copyright, there are also Industrial Designs and Patents in the context of the risk of infringement posed by 3D Printing.

Analysis

So far, it is known that 3D printing technology has a risk for Intellectual Property Rights owners, especially Copyright, Industrial Design, and Patents. These risks include infringement of the distribution of 3D data of a work or product by someone who does not have these rights, replication or counterfeiting of a product, or modification of a product that is already protected by a patent.

Trade in Illegal Products: The use of 3D printing to print illegal or IPR-infringing goods (such as counterfeit goods) can affect international trade. These illegal products can make their way into international markets, posing challenges for IPR enforcement in various jurisdictions.

To have a perspective on how DRM regulations are formulated, we can look at some countries, such as the European Union (EU). Reviewing the EU is necessary because the EU is one of the producers of regulations dubbed as a global standard-setter regarding consumer

protection, financial services, and data. This has considerable implications for developing countries, namely that the creation of a regulation by the EU will have an impact on market access in developing countries. For example, if a company in the EU wants to do a merger and acquisition involving a company in a developing country, the company must follow the higher EU standards.

The reason why the EU has a comprehensive regulation on DRM is because IPR in this digital era is a matter of great significance to the creative sector and the development of today's information age society and to ensure that rights owners get economic benefits for their efforts in creating something. The EU itself has a regulation on Intellectual Property Rights contained in the Directive on the Harmonization of Copyright and Related Rights in the Information Society (2001/29/EC) regarding technological methods to protect the illegal use of IPR.

There are also studies that say that the use of DRM has also reached beyond IPR, but has also begun to enter the realm of competition law when used by the dominant party in the market. This also proves that the regulation of DRM is something that covers other matters beyond intellectual property rights law so there is a need to regulate it.

In Indonesia, piracy is a serious problem. Piracy has a very fatal potential, in addition to harming copyright owners from an economic point of view, piracy also has a bad impact in the sense that it can hamper investment and also the creation of new works due to the lack of incentives for making these works. With the increasing variety or form and number of copyrights that use the internet, it will certainly increase the number of parties who contribute to the creation of a work. In the case of digital works, the digitization also makes it possible for many parties to disseminate a work easily so that digital works will automatically be more vulnerable to infringement than traditional works.

In the EU setting, there is a breakdown of protective measures against DRM circumvention. The EU approach takes a broader view of DRM circumvention in Copyright Law in Information Societies 2001 which specifically defines and protects DRM. By doing so, the EU can create a legal framework that balances the interests of copyright holders and users with effective protection against unauthorized use.

CONCLUSION

3D printing is one of the technologies that increase the risk of infringement of intellectual property rights. This is possible with the theft of 3D model data, replication or counterfeiting of products, and modification of products protected by Intellectual Property Rights. To respond to this, there is a method or technology that can be applied in digital data which can also protect the 3D model data that you want to protect, namely through DRM. DRM itself is a quite effective method because the protected data can be protected whoever the data holder is and wherever the data is located.

With the increasing commercialization of 3D printers and 3D data, the protection of these data will need to be improved and the demand for DRM will continue to increase. At the regulatory level, DRM itself has a basis and recognition at the WIPO level and many western countries have made special regulations that regulate in detail and comprehensively about DRM itself, so DRM has a strong legal recognition and basis to ensure maximum protection that DRM can offer.

In Indonesia itself, the regulation of DRM is only alluded to by 2 Articles in the Copyright Law and is still a complaint offense. The complaint offense has the potential to make protection not optimal and effective because the violations committed can be massive and it is difficult for rights holders to pursue violators individually so that it does not have cost effectiveness for rights holders. In addition, the fact that DRM is only found in the Copyright Law will make the protection of other types of Intellectual Property Rights weak because Intellectual Property Rights are not only limited to regulating Copyright, but also things like Industrial Design Rights and Patents when viewed from the perspective of possible violations involving 3D Printing or 3D data.

For this reason, Indonesia must carry out regulatory reforms by making more comprehensive arrangements regarding DRM to address the risk of intellectual property rights infringement through 3D Printing and digital 3D files. Which not only regulates DRM on Copyright, but also on other types of Intellectual Property Rights in order to utilize DRM technology which has enormous potential for the protection of Intellectual Property Rights such as in patent protection, copyright, and industrial design, especially alluding to 3D Printing technology. In addition, with the comprehensive protection of 3D models, it will have a significant influence on international trade, especially regarding the losses of companies caused by counterfeiting considering that the trade in counterfeit goods accounts for 2.5% of the global economy.

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