

## PalArch's Journal of Archaeology of Egypt / Egyptology

### PATENT VALUATION FOR STARTUPS WITH RESPECT TO THE ENHANCEMENT OF ECONOMY IN INDONESIA TOWARDS THE 5.0 SOCIETY

*Helitha Novianty Muchta*<sup>1</sup>, *An An Chandrawulan*<sup>2</sup>, *Miranda Risang Ayu*<sup>3</sup>, *Muhamad  
Amirulloh*<sup>4</sup>

<sup>1,2,3,4</sup> Faculty of Law, Universitas Padjadjaran, Indonesia

Corresponding Email: [1Helitha.novianty@unpad.ac.id](mailto:Helitha.novianty@unpad.ac.id)

**Helitha Novianty Muchtar , An An Chandrawulan ' Miranda Risang Ayu , Muhamad  
Amirulloh Patent Valuation For Startups With Respect To The Enhancement Of  
Economy In Indonesia Towards The 5.0 Society-- Palarch's Journal Of Archaeology  
Of Egypt/Egyptology 18(4), 5759-5775. ISSN 1567-214x**

**Keywords: Valuation, Patent Rights, Start-Ups, And 5.0 Society**

#### **ABSTRACT**

Despite that any patent has built-in economic rights, it has not been functioned in maximum capacity, the inventors might not be able to directly feel such benefits in terms of receiving funding. Indonesian patent law recognizes a norm where a patent is considered as security object for fiduciary, nonetheless, this is only made in theory and may not be executable in practice yet, one of the reasons is due to the difficulty in determining the correct price for the patent itself. Determining price might be made by a thorough valuation. Many startups are still paving their ways to success and thus, they need funding or capital. This study used normative juridical method, which is focusing on the applicable legal provisions, meanwhile, it also used analytical descriptive specification. Based on those methods of study, the valuation and commercialization of patent may be analyzed from the normative side under sufficient general and legal principles. Descriptive analytical method is a study method that has systematic descriptive and elaborative character which is made towards the data. Valuation and commercialization of patent may be systematically depicted based on the data obtained either from literary or field study.

Results of this study shows that the patent valuation concept is initiated by legal certainty principles, in order to fill-in the vacuum of law with respect to the valuation of the intellectual property (patent) for business startups. As an economic activity, valuation needs to be regulated in the laws to ensure the legal certainty, thus it must be put into norms in the patent law. Aside from the norms, the execution process of intellectual property valuation for patent needs special institution, this institution will simultaneously serve as guarantor for the intellectual property specifically for patent. Moreover, in the practice of valuation, it is

necessary to create a digital application containing the existing norms in the regulation to execute the valuation. With the existence of valuation, it is possible to manifest the fiduciary for patent, enabling startups to access more funding scheme. Startups progression will also support economic growth in Indonesia. **Jel Classification:**

## INTRODUCTION

During 2019, Indonesia still need to continuously organize itself and anticipate several matters including the revolve of era from 4.0 industry towards 5.0 society. This must be viewed as challenge and opportunity to enhance economic growth in Indonesia. The progression of information technology in the 4.0 industry is affecting the protection and utilization process of the intellectual property, the velocity of access of information and the birth of digital companies, resulting into one of which in the form of digital based pioneering companies (startups). This signifies that the matters revolving around the intellectual property is not only concerning its protection, the society in the era of 4.0 industry also emphasize more on the economic function of the intellectual property to welcome the 5.0 society.

People also recognize the 4.0 industrial revolution as digital revolution. The internet in this era has a very strong connection with people's life. Emergence of the Internet of Things (IoT) (Matta & Bhasker, 2019) as a phenomenon of attachment of internet on any objects is obscuring boundaries between physical and digital realms. (Soares & Kauffman, 2018) Meanwhile, the "5.0 Society" may be defined as "intelligent society", where the physical and digital space are highly integrated.

In the 4.0 industry, novice companies are no longer conducting their businesses in conventional fields, they are moving towards the 5.0 society and put their basis on digital business (startups). Startup is novice companies conducting newly established business which use support from digital service, startups dominantly set by minimum number of work group and mostly still need many resources of funding. In Indonesia itself there are now many young entrepreneurs appeared to establish digital based novice companies (startups) with unlimited innovation and creativity. (Heri Setiawan, 2018). The 5.0 society is not defined by this innovation wave, instead, it is defined by the innovation and society modelling method. It is also based on many pillars, including the 4.0 industry and *cybernetics*. (Salgues, 2019).

The naming of 5.0 society is referring to the type of new society where innovation in science and technology occupy prominent position. Its purpose is to balance the social problems that must be settled by the society and to ensure economic development. (Fukuyama, 2020) There are many creative products and intellectual property products which are produced by the small and medium enterprises as well as novice companies in the digital field (startups) which have not yet been protected under the intellectual property registration (Salinova, Gustova, Krakovskaya, & Sirota, 2019). Even so, protected products have not given the feeling of significant economic effect yet to the small businesses.

Some people argue that digital based companies (startups) must be operated by less than 20 employees and they must be running in the digital field with rapid movement. Huge and famous companies such as Lazada, Urbanesia, Gojek, Uber even Kaskus may become the examples of success attained by the digital based novice companies (startups) in the real world. Product innovation they launch have created certain effects and benefits for various problem solving in general (Suwarno & Silvianita, 2017).

In order to be able to enhance the benefit and potential of the Intellectual Property, current business actors must be provided with the new concept of understanding with regards to the good and correct Intellectual Property management. Intellectual Property must be perceived as intangible assets that may have the same position as tangible assets in the future. All this time, business actors recognize tangible assets as lands, machineries, buildings, vehicles, and others.

The Concept of Intellectual Property Asset Management is necessary to answer on what potential does the intellectual property may be considered as an asset by its owner or inventor. Intellectual Property Asset Management is starting from the identification of assets, to the choice of protection type, and the possibility of exploitation of the intellectual property, all of them were meant to extract economic benefits from the intellectual property (Kusnandi & Santoso, 2015).

In its protection, Intellectual Property has both economic and moral rights. Under the economic rights, intellectual property becomes real assets that can give economic benefits for the owner. For digital based novice companies (startups), the most important intangible assets are their business processes, software, data as well as consumer activities. Under the intellectual property law, software may be protected through the copyright regimes, however, specifically for the software with technical effects and complex algorithms, they may be protected under the patent regimes.

It is not common in Indonesia to find protection of computer program or software under the patent regimes, since the law has not yet determined publicly that software and platforms with technical effects and algorithms may be protected under patent. Patent protection is different with the copyright protection, in terms of its constitutive manner. The constitutive character of patent entails the occurrence of the right only after the registration and thus, it shall be protected for the duration of the next 20 years, further, after its expiration, the patent shall be considered as public domain.

Economic rights are becoming the basis of regulation and protection of the intellectual property, one of which is through patent. Economic function should have become the main purpose of patent protection, however in its process, the government is engrossed by the patent protection without seeing whether or not the economic aspects may be executed optimally in the practice of patent utilization.

## RESEARCH BACKGROUND

Owners of industrial businesses do not sense that much of economic aspect from the intellectual property in the digital era, particularly for the digital based novice companies (startups) and the owner of creative industries in Indonesia. The least benefits come from the question on the addition of capital through ownership of intellectual property.

Several laws such as the patent law and the copyright law has put the underlying norms to recognize the intellectual property as fiduciary security. However in reality, these norms are hard to be executed in practice, one of the impediments is the absence of valuation system against the fiduciary object, which in this regard is the intellectual property itself.

This study shall lead to the utilization of economic rights vested upon the patent through the valuation and commercialization, in order to support the economic development in the sense to move towards the 5.0 society in Indonesia. The object of this study is the existing patent owned by the creative industries and digital based novice companies (startups) in Indonesia, since the government is aiming these institutions as the target for economic support and development. It is hard to predict the economic development of digital based novice companies (startups), some might collapse in their early years and some might escalate to giant companies (Rahardjo B. , 2016).

Revitalization becomes the choice of word in facing the economic function which is left behind the protection effort. Ideally, patent protection is made to achieve the utilization of optimum economic and moral function by the inventors, however in practice, this main purpose is becoming unachievable, this might be seen from the absence of proof that patent economic function as fiduciary security is executable up to this day.

Despite that the Article 108 of the Law Number 13 of 2016 concerning Patent, hereinafter shall be referred to as the Patent Law, has put the norm that patent may be made as fiduciary security object (Oktavira, 2020), there has been no financial institution either bank or non-bank that can execute such practice. Besides, the government has not yet made any government regulation as the executorial regulation mandated by the article 108 paragraph (2) of the Patent Law, despite that the Patent Law itself is now 4 years old. The said article is using the word “may” which opens into deviation, or in other words, any financial institution either bank or non-bank may reject patent as fiduciary security.

Since the economic function has not yet running optimally, there are many small-medium enterprises, digital based novice companies (startups) and patent-based companies that have not ripped out the benefits from their own patents. The economic utilization for patent still limited to the sales, licensing agreement, and commercialization of patents, while the fiduciary functions have not functioned by the owner of the patent, either the companies or individual.

One of the reasons why patent cannot work yet as fiduciary security is due to the difficulties in determining value of a patent. Valuation is highly necessary to determine the amount of loan permissible to be taken by submitting patent

as security. Besides, this is also due to the absence of patent appraising institution from the government that may do the valuation act.

Valuation institution shall be necessary when the banks are giving loans to the patent-based companies. Bank may request the valuation institution to determine the patent value based on the most sufficient and beneficial method for the debtor. Taking a closer look, companies have actually fulfilled the legal certainty aspect from the constitutive character mandated through the patent law when the patent is used as fiduciary or made as the main assets in the acquisition and merger of the company (Witjara, 2019).

Aside from becoming the basis of granting loan based on fiduciary, patent valuation may be functioned as the way to determine the value of intangible assets when the company intends to conduct merger or acquisition, at the time of appraising the company for investor finding or at the time of selling and commercializing company products in order to determine the selling price per products (Syker & King, 2003).

Fundamental government policies are necessary to practice the patent valuation. It is hoped that this study may trigger the maximum utilization of economic rights of the patent owner, by the realization of fiduciary practice through patent object. Thus, the economic rights may be revitalized to add-up other aspects in the utilization of the economic rights of patent.

Based on the aforementioned discussion, then it may be identified that the problems in this study are the following:

1. How is the most suitable patent valuation concept to commercialize and maximize the economic value of the patent to face the 5.0 society in order to develop economy in Indonesia?

## **METHOD**

The main method used in this study is juridical-normative. Besides, the research method used is descriptive analytical, with juridical normative and juridical-sociologic approach. Juridical normative method is a scientific study procedure made to find the truth based on the scholarly logics of law from the normative point of view (Ibrahim, 2013). Based on this method, the valuation and commercialization of patent shall be analysed from the normative side based on the sufficient general and legal principles, while the descriptive-analytical method is the research method that has systematic descriptive or elaborative character towards the data. Valuation and commercialization of patent shall be depicted systematically based on the data obtained both from the literary or field studies.

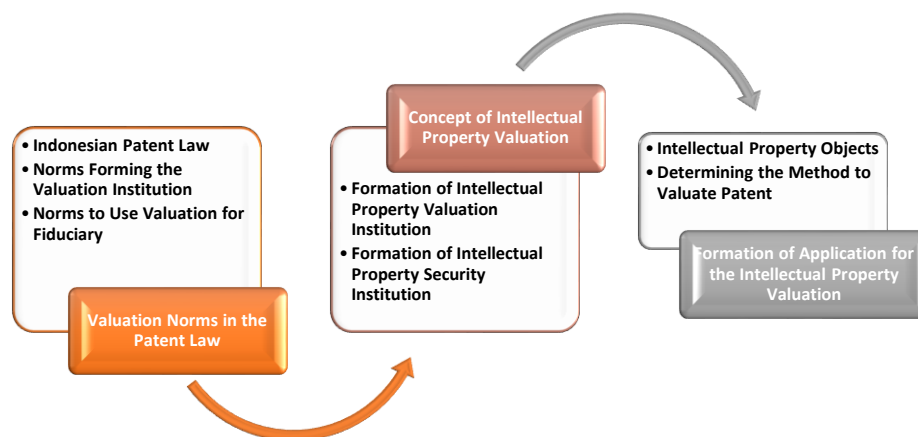
This study, besides using thoughts from the discipline of law, it also used other disciplines such as sociology, economy and information- communication technology. This kind of activities is called interdisciplinary study, hence, besides juridical-normative, in order to enrich the main study in reviewing cases, other disciplines shall be used, or in other words, it shall become socio-legal research. Other method used aside from the normative method shall be

requisite in giving more gravity on this study (Ibrahim, Teori dan Metodologi Penelitian Hukum Normatif, 2013).

## RESEARCH RESULTS

From the study conducted, it is found that the patent valuation must be put into norms first in the patent law. The patent law has mandated the government to form the patent valuation and patent security institutions in order to operate the practice of securing patent as fiduciary security object. Further, based on such norms in the Patent Laws, there shall be a formation of valuation institution along with the practice of valuation in the patent application.

**Picture 1:** Research Process



## DISCUSSIONS

Order as the purpose of law shall be manifested if there is a legal certainty. In a regulation of law, there are legal principles underlying the formation of the provisions. Satjiptop Rahardjo said that legal principles may be interpreted as the “heart” of the regulation of law (Rahardjo S. , 2012). Thus, in order to understand a regulation of law, one must first find its underlying legal principle. Karl Larenz argued in other choice of words, in his book, *Methodenlehre der Rechtswissenschaft* he stated that legal principles are the ethical measurement of law that gives course to the formation of law (Kaufman & Hassemen, 1969). Hence, in forming regulation with respect to the patent valuation, there must be legal principles that serve the function as the basis to establish the law.

In forming the regulation of law, the main principles necessary to ensure that the regulation shall be clear is the legal certainty. Legal certainty as initiatives were first introduced by Gustav Radbruch in his book “*Einführung in die Rechtswissenschaften*”. Radbruch wrote that in law there are 3 (three) main basis, namely (1) Justice (*Gerechtigkeit*); (2) Utility (*Zweckmassigkeit*); and (3) Legal Certainty (*Rechtssicherheit*).

Truthfully, the existence of this principles must be considered as a condition where the law has certainly put security deriving from the concrete power vested in the relevant provisions. Legal certainty as a principle is a form of

protection for the justiciable (justice seeker) against the arbitrary treatment, which means that this principle ensure that a person shall and may obtain something he expects in certain circumstances (Mertokusumo, 1993).

Without the existence of legal certainty, a person will not understand on what act that he must conduct in his given circumstances, in the end, this will lead into uncertainty and in its turn will raise chaos due to the absence of firm legal system. Thus, legal certainty is referring to a clear, permanent and consistent law enactment, where any execution of law cannot be influenced by subjective conditions (Prayogo, 2016). In the patent valuation, legal certainty is highly necessary to achieve uniformity in the calculation of patent value. The existence of valuation shall be able to measure this calculation in objective manner, hence there shall be no party in loss. On the other hand, if the valuation for patent is left unregulated, then it shall raise uncertainty that will affect the execution of patent as fiduciary security, since it may put the bank as the creditor at loss.

In the 4.0 industrial revolution towards the 5.0 society, the economy development has led into digitalization and produce digital economy development. Digital economy is promoting 3 (three) relatively new tendency in the utilization of information and communication technology that is highly advanced and increasing by day everywhere. First is the new source of data from smartphones, it produces accumulation of data in “cloud” and creates group of usable information to create new insights, products, and services despite its risk for the public. Second is business model based on technology platform and innovative products made by technology-based novice companies (startups). Third is the quantitative enhancement in the semiconductor technology (Ghobak, 2018).

The author considers that the revitalization of economic rights to enhance the economy development in Indonesia must be started with the thoughts and concept from the law development theory. It starts from choosing the most sufficient principle to underlie the regulation on the patent valuation in terms of revitalization of economic rights from the inventor. These principles are necessary to become the basis to regulate the valuation, to ensure that there shall be legal certainty and legal order among the society. On that sense, this valuation shall be able to be used as the basis to grant loan with patent as its fiduciary security. Currently, there has been no regulation concerning this valuation, thus in practice, each patent shall have different calculation in its commercialization. This uncertainty makes the bank face difficulty in determining appropriate amount of loan permissible for an application submitted with patent as its security object. Besides, the regulation on fiduciary in the Patent Law still solely regulate without forcing character. This makes it hard for patent to be made as fiduciary security object.

Justice principle underlies the protection of economic rights in terms of valuation and commercialization to own patent. Economic justice will stimulate the inventors to keep innovating. It is necessary to distribute this principle to the inventors through the warranty in the form of actualization of economic rights as the justice for the patent owner, one of which is through

the fiduciary security of the patent itself. Fiduciary security of the patent shall not be functioned before there is legal certainty on the regulation regarding the valuation and uniformity of this valuation towards the intangible assets (patent). Meanwhile the uniformity itself may only be manifested if there is regulation on the valuation as well as the implementation of patent as the fiduciary security object.

From the institutional point of view, it is important to coordinate with and strengthen various sectors to support the valuation and commercialization of the patent owner by the digital-based novice companies (startups), to the extent that they may use these circumstances as the effort to add their capital. Such sectors are namely: (1) inventor, (2) Ministry of Communication and Informatics; (3) Directorate General of Intellectual Property Rights in the Ministry of Law and Human Rights; (4) Ministry of Finance; (5) Banking Institutions. The five sectors mentioned have their own roles and must be regulated under one legislation and regulations related to the coordination among the sectors in terms of valuation and commercialization of patent to support the manifestation of patent fiduciary, to be able to actualize the enhancement of national economy.

Creativity and innovation are the facilities necessary for the economic growth. Indonesia is a country enriched with potential human resources abundance in creativity and new inventions that have selling value. Intellectual property is a very valuable asset in business transaction, further, recently the government is in the middle of propaganda to claim Indonesia as the largest digital economy country in Southeast Asia in 2020. Valuation and commercialization are two economic aspects that are inseparable and cannot be released from legal aspect. In order to bridge these two disciplines, namely law and economy, one can use posner theory related to the Economic Theory of Law.

The Economic Theory of Law or more precisely called as the Economic Analysis of Law is meant as an economic approach towards the law, or in other words entails critical study towards the law through economic approach (Critical Legal Studies with the Antecedents of Economic Approach) (Price, 1989).

*The Economic Analysis of Law elaborated by posner is integrating insights between the law and economy based on efficiency. Through this theory, Posner tried to analyze all policies and regulations of law based on their efficiency (Posner, 1986). Economy and law can be integrated and combined since they have the same purpose, namely welfare. In this study, valuation is considered as economic term on how to calculate intangible asset such as patent. A valuation may not be running and used in practice if there are no regulating norms of law. It is necessary to make a regulation as guidelines in valuating patent, further, the end purpose of this study is to understand on how the valuation applied and used in real life as the basis to determine the value of fiduciary object.*

Legal aspect becomes the determinant in the course of economy for a country, economic concepts and aspects hold the role as technical support in



performing legal policies related to the economy. Basically, intellectual property concept including patent includes (1) right of ownership resulting from (intellectual) reasoning, it is attached to the owner which has fixed and exclusive character and (2) rights obtained by other party with the permission from the owner which has temporary character. The result of this reasoning ability is idea, it then shall be incarnated in the form of creation or invention that has novelty value, inventive moves and must be able to be applied in the industry, in short, it is called as Patent regimes.

The purpose of various international and national instrument is to manifest the economic function from the intellectual property, particularly patent, to maximize the economic function, one of which through the valuation of patent as the basis to calculate the value of intangible assets. Intellectual property is a part of immaterial assets. One of the reasoning for this theory is that in the system of the law of property, the Civil Code stated that patent shall be categorized as immaterial and movable property (Amirulloh & Novianty, 2016).

Valuation is a process to identify and measure the financial benefit of an asset. Valuation, or commonly known as the calculation or determination of value of an asset, is highly necessary for the owner of the intellectual property, notably patent owner, since valuation is an identification and measurement process to determine the value of an intangible asset. Valuation contains two main concepts, first, narrow definition elaborates that it calculates the financial value or usually known as “price” of an intellectual property, second, broader definition describes the importance of valuation to understand intellectual property in a business and how to manage the intellectual property for acquisition and exploitation effectively (Syker & King, 2003).

Valuation is highly necessary for the patent owner since if done effectively, it may be accepted as valid asset based on the accounting principles. Speaking about commercialization or more specifically about fiduciary object, one must and cannot overlook the topics around the price of a (patent) object. In order to determine the price or value of a patent, one must go through a valuation. Other reason why a valuation is very important is because it is considered as mandatory from legal perspective and administrative regulation in companies may also requiring it (Robert & Robert, 2018).

In conducting intellectual property (patent) valuation, usually it is based on three principles: first, whether the patent right has already been registered, hence it is already equipped with the ability to prevent other parties to use the patent or invention; second, whether the patent rights may be enforced and protected from other parties who intend to use the invention, the core of the second principle is legal certainty that must exist to protect the relevant parties; third, the rights under the law related to the several products or services or businesses as a whole, which in turn shall generate revenue. However, the value of intangible asset such as patent is not solely depending on the legal aspect, it also rely on various aspects related to the patent, this affect the price or value of the patent, such values for example are confidentiality, people’s knowledge, customer relationship market interest,

scarcity of the invention, market and people's demand, industrial interest, value of the patent creation, value of the research, scarcity of raw materials and many other aspects that may affect the price and value of a patent. (Syker & King, 2003).

In executing the intellectual property valuation, particularly for patent, there are 3 methods which are usually used. First, the Income Based Approach Method, this method calculates the estimated revenue that may be obtained from a patent. Second, the Cost Based Approach, this method calculates based on the expenses incurred by the patent owner and use it as the basis of selling price or licensing price of a patent. Third, the Market Based Approach, this method is based on the appropriate market value over other similar or substitute object in the market (Robert & Robert, 2018).

There are several activities related with the intangible asset that need valuation, one of which is when a company or the patent owner is determining the price at the time of transaction, determining selling price, determining license price, determining value at the time when the patent becomes a joint venture object, at the time when the investors are appraising the value of company's assets, calculation of company's assets, calculation of guarantee in case the intangible asset is to be submitted as security for loan, use of the intangible asset for security to the bank, to calculate the amount of loss in case of patent violation, information for the management team in case of joint development and the most important one is the valuation for patent commercialization, development and research development itself.

The valuation process differs the tangible asset and intangible asset due to their different character. Valuation to the intangible asset such as patent is harder in calculation compared with a valuation towards a building, since it is harder to determine immaterial property.

One of the economic rights from the patent that still left out is the manifestation of patent as fiduciary object. It has already put into norm in the Article 108 of the Patent Law. The most prominent impediment is the absence of legal certainty on the patent valuation. This condition resulting into vacuum of certain standard to calculate the value of a patent right. Uncertainty highly affects acceptability of banking institutions in receiving the patent right as fiduciary security object.

Patent as fiduciary security object is currently very needed by the creative industries and technology-based novice companies (startups). Indonesia today has already entered the 4.0 industry and preparing to welcome the 5.0 society. In this era, digital-based novice companies (startups) which still need abundant capital resources, have minimum tangible assets. Instead, they are eminent for their intangible assets, one of which are in the form of patents. In order to maximize the function of economic rights, it is necessary to build a system to support the function of economic rights from the patent, notably the ones owned by the startup businesses which nowadays are becoming the main pillars for the economic development in Indonesia.

Now, in facing the transition from the 4.0 industry to the 5.0 society, Indonesia is creating a world where the virtual and physical system may form a flexible partnership. This enable inventors to create products on demand and have created a new working model (Schwab, 2017). The 5.0 society is putting endeavor in achieving (ecologic) sustainability, broad inclusivity, and efficiency, therefore, the implementation of industrial competitiveness recently is relying on the power of intelligence and knowledge (Salgues, 2019). Ability to adapt, agility, mobility and reactivity are now becoming the key in the 5.0 society's way of living. This covers the fact that mutation, changes, and evolution may be observed in everyday life. This is also reflected from the infrastructure, knowledge and skills revolved around the society. This fact also highlights that the 5.0 society will only need to borrow modern technique from the 4.0 industry and utilize lesser resources to achieve production. Mobility affect people's need on transportation, people can now invent at their homes, everything is becoming "mobile" and smarter. The 5.0 society is the "New Era" where exchange becomes crucial. This concept is questioning the supremacy of economic exchange and initiatives (Salgues, 2019).

In the western democratic countries, there is a supremacy of exchange between goods. The performance of transportation facilities is certainly more favorable by the globalization. However, the 5.0 society is putting the eminence of idea and knowledge forward. Around 1992, China develop its soft skill in the form of supremacy of idea. France is other example with the reflection of its "cultural exception." Export initiatives and knowledge have become the source of wealth during the period where exports experienced plummet and where it has bounced back.

The 5.0 society was first applied in Japan, here, the manufactures are not conducted at the capital, however, it was simultaneously done by all of the people. The 5.0 society or super intelligent society was introduced in the effort to build the fifth basic plan for the science and technology. It is characterized by the existence of Information Technology (IT), particularly the artificial intelligence, it will change many things in business and daily life (Fathi, 2019).

The 5.0 society is a more comprehensive expression implying that changes will affect many aspects of the whole society. At the Cebit 2017 exhibition in Hannover, Germany, the Ministry of Economics, Trade and Industry of Japan (METI) introduced the concept of "Interconnected Industry" to realize its vision on the 5.0 society (economy, 2017).

In the middle of the "Interconnected Industry" there is industrial production, which still hold as the backbone of Japan's Economy. Industry which interconnects with data and artificial intelligence has now applied in Japan currently. In the interconnected industry, the industry shall introduce its inventions to the society and distribute them to the small-medium enterprises, hence, there shall be a harmonious relationship between giant industries and the small-medium enterprises (Fathi, 2019). Artificial Intelligence (AI) shall hold the fundamental role to handle a huge amount of data and this creates a new value for new business model. In the end, there shall be more effort left to

be done in the collaboration between human and the machines. Here, AI may also help since it enables us to understand and distribute knowledges and inventions (Salgues, 2019).

Exchange of data inside of a company is highly necessary in this industry, there shall be no problem in determining safe standard on this regard. However, exchanging data with external entities will need reliable working framework. Efficient connection and use of data will encourage innovation, better productivity and deployment of technology. In the 5.0 society, there shall be harmony between giant industries and small-medium enterprises which is possible through the transfer of newest innovation.

The most prominent and expected characteristic by a country and its people in the 4.0 industry in welcoming the 5.0 industry is the rapid and unforeseeable economic growth. This will occur when the digital based novice companies (startups) such as Go-Jek suddenly become a giant company and generate abundant profits. This will surely contribute to the economic growth of Indonesia. With this success story as an example, the Ministry of Communication and Information initiated 1,000 Digital Startups Program, in the form of grant of operational funding for the companies until other various programs supporting the digital based novice companies (startups) to grow and develop as expected.

Economic development is highly expected with the existence of digital based novice companies (startups), thus, the government must also think about the continuity of this program and to light up many other digital based novice companies (startups) through other programs. One of the ways is to raise the economic function of a patent, notably as the fiduciary object. Whether like it or not, this agenda must go through systematic valuation process and must be regulated in detail. Economic development of a country must first start with its development of law. This is an answer that might be found in the Law Development Theory as the basic concept passed on to the reward theory. The reward theory shall become the intermediary between the Law Development Theory and the Posner Theory of “economic analysis of law,” which serves as the main analysis tool in this study to implement the economic aspect (valuation) in the law. However, further, in order to manifest this ambition, more applicative theory shall be necessary to apply the regulation that is able to calculate appropriate valuation of patent, this is based on the “Code” theory by Lawrence Lessig.

Lessig argues that in fact, there are four main regulators, namely the Law, the Social Norms, the Market and the Architecture, that each has significant effect to the society and which implication must be thoroughly considered (Lessig, 1999). This matter is elaborated in his book entitled “Code and Other Laws of Cyberspace” published in 1999. He stated that computer or software systems (or “West Coast Code,” referring to the Silicon Valley) is regulating behavior with the same manner as the law (or “East Coast Code,” referring to the Washington, D.C.).

Lawrence Lessig also argue that control of the execution of the law is not only in the hand of the regulators, which in this regard refers to the government, however it is in the invisible hand who support the government to create a regulation and determine the market (Lessig, 1999), The invisible hand is also forming an architecture that becomes the main control and makes the formation of regulation has to be efficient (Lessig, 1999).

Further, Lawrence Lessig stated that:

*“Cyberspace teaches a new threat to liberty... Thus, four constraints regulate this pathetic dot--the law, social norms, the market, and architecture—and the “regulation” of this dot is the sum of these four constraints. Government has a range of tools that it uses to regulate. Cyberspace expands that range. The code of cyberspace is becoming just another tool of state regulation.”*

In the further development, Lawrence Lessig in his book “Code Version 2.0,” which is the revision from his former book “Code and Other Laws of Cyberspace” stated that, “ *“The problems that cyberspace reveals are not problems with cyberspace. They are real-space problems that cyberspace shows us we must now resolve—or maybe reconsider.”* (Lessig, 1999).

This argument from Lawrence Lessig is becoming the ground of argument that valuation needs to be formed as norms and also to be executed with the help of one “application” containing norms in the rules and regulations. This application shall be used to calculate the patent valuation and further to trigger the creation of other intellectual property application with similar function and manifest the possibility of intellectual property/patent to become fiduciary security object.

Same tune is also coming from Francis Lim, he stated that “Development of technology has limitation, which means that the welfare of humankind due to the rapid development of technology is not coupled with the morality development (Lim, 2008). People’s experience and culture are changing as the result of technology implementation, which in specific definition feels foreign from the existing culture. However, this might instead be viewed as some kind of warning from the universe to be aware on the effect brought by the technology (Lim, 2008).

This difficulty is also caused by the virtual character of the digital world. Rob Shields described on his term that virtual reality developed through the evolution of internet is creating a space that may represent or simulate the real life. Same as Lessig, Shields also discuss about the possibility of control in the virtual world, which in his opinion is also possible to have its freedom constrained by certain limitations. Nonetheless, it shall not be fully successful, taking into consideration the difficulties in regulating the digital world (Shields, 2003).

In the Code Version 2.0, Lessig explained how 4 (four) modality of different regulation may interact one another, either in terms of supporting or weaken

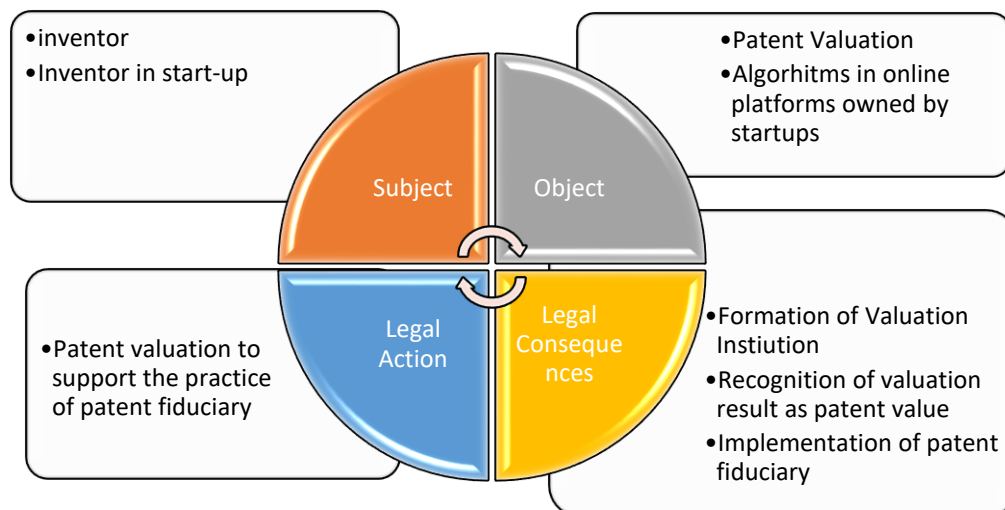
certain rights, particularly to depict on how to control people’s behaviour in the cyberspace, or the law to regulate attitude in the digital world (Lessig, 1999).

Code has become the centre and main anchor to practice the valuation, it contains some insertions from the legal norms in the regulation, and then manifested through online valuation application which shall be the intended output of this research. From this matter, it is expected that this dissertation can both served as displayed writings and further resulted into practical and applicative use for the society.

The term “5.0 society” was first appeared in Japan in 2016. Since then, it has been spreading across the globe and the basic concept has been developed continuously. The 5.0 society is a term used in the Basic Plan of Fifth Science and Technology, as reviewed by the Science, Technology and Innovation Board of the Japanese Government. It was enacted by the Ministry Cabinet in January 2016 (Salgues, 2019).

The 5.0 Society may be defined as the “intelligent society,” where the physical and digital world is highly integrated. Despite that it is focusing on the humanity, the 5.0 society is referring to the type of new society where innovation in the science and technology is holding prominent position, with the purpose to balance social problems with the society that needs to be solved, while ensuring the economic development. Despite that this approach is borrowing lots of elements from the declining theory, however they are actually contradictory (Salgues, 2019).

**Picture 2 : Concept Of Norm Formation In The Patent Law**



**CONCLUSION**

Based on the analysis towards the identified problems, it can be concluded as follow:

The patent valuation concept is started with the legal certainty principles in order to fill-in the vacuum of law related to the valuation of (patent)/intellectual property for startup businesses. Analysis of Law from

Posner is the ground theory where the valuation as economic activities needs to be regulated under the law to ensure the legal certainty. Therefore, a valuation must be put into norm and patent law. Besides being put into norm, the implementation process of the valuation of either the patent or the intellectual property shall need special institution and also securing institution at the same time. On the other hand, in the practice based on the “Code” theory, in implementing the valuation, it is necessary to form a digital application containing the norms in the valuation regulation for the sake of its execution. This valuation shall make patent fiduciary possible and open more funding opportunities for startups. Enhancement of startups will indirectly support Indonesia’s economy.

## REFERENCES

### *Bibliography*

- Law, T. (2016). The Law Number 20 of 2016 on Trademark and geographical Indication.
- Llewelyn, W. C. (2003). *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights 5th edn*, pp 586–592, London, 2003. London: Sweet & Maxwell.
- Johnson, S. T. (2001). Internet domain name and trade mark disputes: shifting paradigms in intellectual property. *Arizona Law Review*, Vol 43, p.465.
- Mukti Fajar, Y. A. (2013). *Dualisme Penelitian Hukum Normatif & Empiris*. Yogyakarta: Pustaka Belajar.
- Sumardjono, M. S. (1989). *Guide to Composing a Research Proposal*. Yogyakarta: Gajah Mada University.
- Mertokusumo, S. (1996). *Legal Innovation: An Introduction*. Yogyakarta: Liberty.
- Sidharta. (2006). *The Morality of Legal Professionals: An Offer of A School of Thought*. Bandung: Refika aditama.
- Oppedahl, C. (1997). ‘Remedies in Domain Name Lawsuits: How Is a Domain Name Like a Cow?’ . *ohn Marshall Journal of Computer and Information Law* 437, 437.
- Pornography, L. o. (2008). Article 5 of Law on Pornography states that, “Anyone is prohibited to lend or download pornographic content as set forth in Article 1 Paragraph (1).”. *law on pornography*.
- Law, C. (1999). Article 26 A of Law on Corruption Eradicatoin states that, “Legal evidence in the form of instructions as set forth in Article 188 Paragraph (2) of Law No. 8 of 1981 on Criminal Procedural Law.
- Ware, S. J. (2002). *Domain-Name Arbitration in the Arbitration-Law Context: Consent to, and Fairness in, the URDP*. J. Small & Emerging Bus.
- Aunurrohim, M. (2018, September 1). *The Certainty and Utility of Law in Indonesia*. Retrieved from academia.edu: [http://www.academia.edu/10691642/\\_Keadilan\\_Kepastian\\_dan\\_Kemanafaatan\\_Hukum\\_di\\_Indonesia](http://www.academia.edu/10691642/_Keadilan_Kepastian_dan_Kemanafaatan_Hukum_di_Indonesia)
- Sagama, S. (2016). Analysis of the Concept of Justice, Law Certainty, and the Utility of Law in Environment Management. *Jurnal Pemikiran Hukum Islam Mazahib*, 20-41.

- David, L. (2007). *International Domain Names Law, ICANN and the UDRP*, Hart Publishing, Oxford and Portland, Oregon, 2007, pg. 211. Oxford and Portland: Hart Publishing.
- Lipton, J. D. (2008). *Celebrity in Cyberspace: A Personality Rights Paradigm for Personal Domain Name Disputes*. *Washington and Lee Law Review*.
- Muhamad, A. a. (2015). *Cybersquatting Terhadap Nama Orang Terkenal*. Bandung: CV. Kalam Media.
- Soares, M. N., & Kauffman, M. (2018). Industry 4.0: Horizontal Integration And Intellectual Property Law Strategies In England. *R. Opin. Jur., Fortaleza*, .268-289,.
- Matta, I., & Bhasker, P. (2019). INTERNET-OF-THINGS: GENESIS, CHALLENGES AND APPLICATIONS. *Journal of Engineering Science and Technology*, 1717-1750.
- Heri Setiawan, (. t.-s.-a.-s.-s.-d.-k. (2018, 02 11). Pengertian startup adalah, Sejarah dan karakteristiknya. Jakarta: <https://www.liputan6.com/tekn/read/3867489/pengertian-startup-adalah-sejarah-singkat-dan-karakteristiknya>.
- Salgues, B. (2019). *Society 5.0 industry of the future, Technologies, methods and tools*. USA: Wiley.
- Salinova, T., Gustova, N., Krakovskaya, I., & Sirota, E. (2019). From industry 4.0 to Society 5.0: challenges for sustainable competitiveness of Russian industry. *IOP Publishing, Series: Materials Science and Engineering*, 1-15.
- Fukuyama, M. (2020). Society 5.0: Aiming for a New Human-Centered Society,. *Japan SPOTLIGHT*, <https://www.jef.or.jp/journal>, 1-15.
- Suwarno, D. J., & Silvianita, A. (2017). Knowledge Sharing Dan Inovasi Pada Industri Startup. *Jurnal Ecodemica*,, 214.
- Kusnandi, & Santoso, B. (2015). Audit Hak Kekayaan Intelektual Sebagai Bagian Pengelolaan Resiko Kerugian Bisnis Bagi Perusahaan. *Jurnal Law Reform*, 93.
- Rahardjo, B. (2016). *Starting-u*. Jakarta: PT Insan Infonesia.
- Oktavira, B. A. (2020). *Eksekusi Paten Sebagai Objek Jaminan Fidusia*. Jakarta: <https://www.hukumonline.com/klinik/detail/ulasan/lt590af6f153f9d/eksekusi-paten-sebagai-objek-jaminan-fidusia>.
- Witjara, E. (2019). *Digital Business Valuation*. Jakarta: Rayyana Komunikasindo.
- Syker , J., & King, K. (2003). *Valuation and Exploitation of Intellectual Property and Intangible Assets*. Hertfordshire Britain: Emis Professional Publishing Ltd.
- Ibrahim, J. (2013). *Teori dan Metodologi Penelitian Hukum Normatif*. Malang: Bayumedia.
- Rahardjo, S. (2012). *Ilmu Hukum*. Bandung: Citra Aditya Bakti.
- Kaufman, A., & Hassemen, W. (1969). Enacted Law and Judicial Decision in German Jurisprudential Thought. *The University of Toronto Law Journal*, 461-486.
- Mertokusumo, S. (1993). *Bab-Bab Tentang Penemuan Hukum*. Bandung: Citra Aditya Bakti.



- Prayogo, R. T. (2016). Penerapan Asas Kepastian Hukum Dalam Peraturan Mahkamah Agung Nomor 1 Tahun 2011 Tentang Hak Uji Materiil Dan Dalam Peraturan Mahkamah Konstitusi Nomor 06/Pmk/2005 Tentang Pedoman Beracara Dalam Pengujian Undang-Undang. *Jurnal Legislasi Indonesia*, 194.
- Ghobak, M. (2018). The future of manufacturing industry: a strategic roadmap toward Industry 4.0. *Journal of Manufacturing Technology Management*, 910-936.
- Price, D. A. (1989). Taking Rights Cynically: A Review of Critical Legal Studies. *The Cambridge Law Journal*, 271-301.
- Posner. (1986). *Economic Analysis of Law*. England: Wolters Kluwer.
- Amirulloh, M., & Novianty, H. (2016). *Buku ajar: Hukum Kekayaan Intelektual*. Bandung: Unpad Press.
- WIPO. (2017, June 17). "Constructing the "Price" of the Technology in IP Licensing Negotiations. Jakarta.
- Robert, R. F., & Robert, S. P. (2018). *Guide to Intangible Asset Valuation*. New York: Wiley.
- Schwab, K. (2017). *The Fourth Industrial Revolution*. Geneva: Portfolio Penguin.
- Fathi, M. (2019). *optimization In Large Scale Problem Industry 4.0 and Society 5.0 Application*. Florida: Springer.
- economy, M. m. (2017, 10 02). [https://www.meti.go.jp/english/policy/mono\\_info\\_service/connected\\_in\\_dustries/index.html#press](https://www.meti.go.jp/english/policy/mono_info_service/connected_in_dustries/index.html#press). Retrieved 04 04, 2020, from [https://www.meti.go.jp/english/policy/mono\\_info\\_service/connected\\_in\\_dustries/index.html#press](https://www.meti.go.jp/english/policy/mono_info_service/connected_in_dustries/index.html#press)
- Lessig, L. (1999). *Code and Other Laws of Cyberspace*. New York: Basic Book.
- Ibrahim, J. (2013). *Teori dan Metodologi Penelitian Hukum Normatif*. Malang: Bayu Media.
- Lim, F. (2008). *Filsafat Teknologi Don Ihde tentang Dunia, Manusia, dan Alat*. Yogyakarta: Kanisius.
- Shields, R. (2003). *Virtual: Sebuah Pengantar Komprehensif*. Yogyakarta: Jalasutra.