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Intellectual Property Rights Protection in Industry-University Collaboration to Increase Innovation and Promote Indonesia's Economic Competency

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***Abstract*—**Collaboration between higher education institutions and industries plays a strategic role in enhancing innovation to support accelerated economic growth. This study discusses effective strategies to facilitate collaboration between the two parties through the protection of Intellectual Property Rights (IPR). Universities, as centers for research and development (R&D), can provide relevant knowledge and technology, while industries play a role in applying innovation results to the market. The relationship between universities and industries in Indonesia remains suboptimal, as each party tends to work with different priorities. This study employs a descriptive research specification with a qualitative approach. Primary data, consisting of survey results and interviews, serve as the main data for the research, supported by secondary data in the form of legal materials, including primary, secondary, and tertiary legal sources. The data are analyzed using a qualitative normative descriptive method. The protection of intellectual property rights (IPR) is a key element in driving investment in research and innovation while ensuring that economic benefits are distributed equitably. The proposed strategies include establishing collaborative policies, enhancing human resource capacity in IPR management, and developing an innovation ecosystem based on IPR. Through this approach, it is anticipated that collaboration between higher education institutions and industries will create significant added value for national economic growth.

Keywords— *Innovation Collaboration, IPR Protection, Indonesia's Economic Growth.*

I. INTRODUCTION

Collaboration between universities and industries has emerged as a pivotal strategy for fostering innovation and enhancing national economic competitiveness. This partnership is characterized by the unique strengths of both entities: universities serve as centers for education, research, and knowledge generation, while industries possess the capability to transform research outcomes into high-value products and services. However, the effective realization of this collaboration faces significant challenges, particularly concerning the protection of Intellectual Property Rights (IPR). IPR encompasses legal protections such as patents, copyrights, and trademarks that safeguard innovations. Robust IPR protection is essential for ensuring that the benefits of research and development (R&D) are not only legally secured but also economically advantageous for all stakeholders involved[1]. Without adequate IPR safeguards, the potential for innovation is often diminished due to risks associated with infringement, unfair competition, or unauthorized exploitation of intellectual assets.

The ideal scenario for university-industry collaboration involves the creation of innovations that significantly contribute to national economic growth. IPR serves as a catalyst in this process by providing a framework that guarantees exclusivity over innovations, thereby facilitating their commercialization[2]. The government and relevant stakeholders are expected to foster a conducive ecosystem through supportive regulations, adequate research facilities, and incentives that encourage strategic partnerships. The strategies employed in university-industry collaborations can yield far-reaching impacts. Firstly, IPR protection allows universities to commercialize innovations securely, generating economic benefits across academia, industry, and society. Secondly, industries are more inclined to invest in R&D when assured that collaborative outcomes will be legally protected. Lastly, innovations that are well-protected can enhance the competitiveness of products in global markets.

In Indonesia, government initiatives have emphasized strengthening IPR protection to stimulate innovation and economic growth. For instance, Law No. 13 of 2016 on

Patents establishes a legal framework for safeguarding new inventions with industrial applications. Furthermore, various policies encourage universities to synergize with industries by downstreaming research results and fostering technology-based startups[3]. Despite these efforts, challenges persist in optimizing university-industry collaborations in Indonesia. As of 2024, the Directorate General of Intellectual Property (DJKI) reported 302,822 IPR registrations; however, most applications originated from individuals and SMEs rather than collaborative efforts between universities and industries. Studies indicate that only about 10% of university research results transition into commercial products due to various factors including low awareness of IPR's importance among academics and industry players.

Key issues contributing to suboptimal collaborations include a lack of clear national regulations governing IPR rights division, insufficient awareness regarding the significance of IPR protection among stakeholders, limited support facilities such as Technology Transfer Offices (TTOs) that bridge research with industry needs, and minimal government incentives promoting strategic collaborations. Additionally, data from the Ministry of Research and Technology/BRIN (2022) reveals that Indonesian universities generate significantly fewer patents compared to neighboring countries like Malaysia and Singapore[4]. This discrepancy highlights the need for improved funding mechanisms, greater industry interest in academic innovations, and more effective IPR protection systems.

Internationally, countries such as Japan have established robust frameworks for university-industry collaboration concerning intellectual property. Research indicates that intellectual property disputes are rare in Japanese collaborations due to clear agreements granting companies exclusive rights over collaborative inventions. Similarly, Canada has reported minimal complaints regarding intellectual property issues among firms engaged in focused collaborations[6]. In the United States, the Bayh-Dole Act has enabled universities and small businesses to retain rights to intellectual property derived from government-funded research, thereby enhancing collaboration and commercialization efforts.

The gap between expectations and realities in building effective university-industry collaborations underscores the necessity for improved IPR management mechanisms. While collaboration holds promise for accelerating innovation and commercialization, many partnerships lack clarity regarding IPR management. This study focuses on proposing integrated national platforms to facilitate university-industry collaborations. The novelty lies in combining digital technology, proactive regulations, and result-oriented partnerships to create a sustainable innovation ecosystem.

II. METHOD

This study employs a descriptive research design with an empirical juridical approach, focusing on legal phenomena within social realities, specifically the protection of intellectual property rights (IPR) in collaboration between universities and industries to enhance innovation and accelerate economic growth in Indonesia.

The research requires both primary and secondary data. Primary data is obtained through in-depth interviews with five respondents selected using purposive sampling to strengthen the secondary data[7]. Secondary data is gathered from legal materials, including primary, secondary, and tertiary legal sources. Primary legal materials analyzed in this study include: Law No. 28 of 2014 on Copyright, Law No. 13 of 2016 on Patents, and Law No. 20 of 2016 on Trademarks and Geographical Indications. Additionally, secondary legal materials analyzed include court decisions (case studies)[8], doctrines, draft regulations, previous research findings, and other relevant sources. Tertiary legal materials include expert opinions, public commentary in journals, magazines, books, and other resources collected through library research. Primary data from interviews with selected respondents is also used to support the analysis of these legal materials, involving five universities and five companies.

The collected legal materials are classified according to the identified issues. Subsequently, these materials are tested against social realities where legal phenomena emerge as subjects for analysis. These phenomena are then examined using an empirical juridical method with a qualitative approach..

III. RESULTS AND DISCUSSION

Result

Intellectual Property Rights (IPR) refer to rights over intangible movables resulting from human creativity and effort. However, these rights do not cover ideas themselves but ideas materialized into creations. Ownership of IPR does not pertain to physical objects but to intellectual achievements, such as the expression of an idea, rather than the idea itself. Intellectual property rights come into existence only when intellectual capabilities yield tangible results that can be seen, read, heard, or practically utilized[1].

The concept of protecting intellectual property rights is rooted in the natural law theory. Hugo de Groot, a prominent figure in natural law, outlines four principles of intellectual property rights: the principle of "yours and mine," the principle of fidelity to promises, the principle of compensation, and the principle of the necessity of punishment[9]. According to Hugo de Groot, private property rights are exclusive rather than inclusive, meaning that property owners have the exclusive right to defend and use their property without allowing others to claim the same rights over it[10].

As property rights, intellectual property owners have the broadest rights to utilize, defend, and transfer their rights, as well as to challenge anyone who misuses or infringes upon them. However, property rights are limited by laws, morality, and public interest.

The natural law conception of property rights has influenced the recognition of intellectual property rights, giving rise to various theories underpinning their protection. Robert M. Sherwood (1990) identifies five theories underlying intellectual property protection:

1. Reward Theory: Creators in science, arts, and literature, as well as inventors of innovative and industrially applicable technologies, are granted recognition and legal protection

for their achievements. Recognition and appreciation are key elements of this theory.
2. Recovery Theory: Inventors/designers who have invested time, money, and effort in producing intellectual works should not only receive recognition but also recoup their investments through exclusive rights to exploit their intellectual property.
3. Incentive Theory: Incentives are necessary to stimulate creativity and the development of new works in technology, fostering useful research activities.
4. Risk Theory: Intellectual property often involves high-risk research. Legal protection is justified to safeguard the efforts and outcomes of such risky endeavors.
5. Economic Growth Stimulus Theory: Intellectual property protection not only rewards creators but also serves as a tool for economic development, aiming to establish a robust system of intellectual property protection that contributes to economic growth.

Creators, inventors, and designers in technology, science, arts, and literature are entitled to intellectual property rights, which fall under intangible movable property. According to Sri Soedewi Masjchoen Sofwan (2000), property rights have the following characteristics:

1. Absolute nature: Enforceable against anyone.
2. Zaakgevolg or droit de suit: Rights follow the rightful owner.
3. Priority system: Earlier rights take precedence.
4. Droit de preference: Rights of first preference.
5. Legal action: Rights can be enforced against any violator.
6. Transferability: Rights can be fully transferred.

Consequently, intellectual property owners have absolute rights to exploit, enjoy, defend, and transfer their rights to others or legal entities, allowing the transferee to exploit the intellectual property[11]. Licensing refers to the transfer of intellectual property rights with the owner's permission. Licensing agreements are formalized contracts providing legal protection to involved parties under contract law, ensuring fair use and adherence to agreed-upon terms.

In the context of collaboration for innovation, licensing agreements should adhere to:

a) Justice Principle: Ensuring all parties (universities, industries, and creators) benefit equitably.
b) Legal Certainty Principle: Providing clear rules for IPR protection (e.g., patents, trademarks, copyrights).
c) Efficiency Principle: Promoting effective cooperation and innovation beneficial to society and the economy..

Discussion

Culture of Innovation in Higher Education and Intellectual Property Rights

Higher education is a breeding ground for intellectuals consisting of the academic community to carry out all their intellectual activities to experiment, innovate and be creative where all ideas can be realized. The results of creativity and innovation in the fields of literature, art, knowledge and technology are his intellectual property. Basically, every intellectual property as an intangible object has rights, namely intellectual property rights (IPR) which consist of moral rights and economic rights. Both moral rights and economic rights have an important impact on their owners. Moral rights have implications for the reputation of creators, inventors, and designers, while economic rights can have an impact on the welfare of creators, inventors, and designers as mentioned in reward theory [12]. Therefore, lecturers, students as an intellectual community are encouraged to be more creative and innovative in order to create superior intellectual intelligence that has a significant impact on the welfare of lecturers as well as universities.

However, the reality is that lecturers and students have not optimally improved their intellectual ability to create, discover, and design innovatively, and even their works are still relatively few. From the results of surveys in several universities, there are not many lecturers who have produced intellectual property. This is due to several things, including:

Universities have not been able to budget for optimal research activities, so there are still few research activities carried out. From interviews with 5 university leaders, the research budget is only about 10% of the university budget.

The research culture that produces high innovation in lecturers and students is still relatively low, so that the results of their work do not have high economic value, even to not have an impact on their reputation.

The legal awareness of creators, inventors, and designers among universities is still low. From the results of interviews with lecturers who conduct research and produce creations, findings, and designs, there are still few that have been registered with the Directorate General of Intellectual Property. Some of the reasons include (1) funding for registration is only done by lecturers, rarely universities facilitate it, (2) feeling that there is a lack of appreciation given by universities to lecturers who find new innovations, (3) often the findings are not followed up.

According to data from the Directorate General of Intellectual Property (DJKI), until the end of December 2024, the total receipt of applications for Intellectual Property Rights (IPR) in Indonesia reached 302,822. Details of the application include:

a) Copyright: Applications for copyright registration reached 141,980
b) Trademarks: Trademark registration applications reached 139,338.
c) Patents: Patent registration applications reached 15,023.

Even though there is an increase in public awareness to register IPR, nevertheless, the awareness of the Indonesian people to register their intellectual works is still considered low. The Director General of KI, Razilu (2024), stated that the number of applications in 2024 which reached 300 thousand is still small when compared to the number of Indonesia's productive population. Therefore, inclusive regulations are needed, namely simplifying the IPR protection process and providing incentives in the form of tax cuts for industries that invest in R&D.

Compare with other countries. Specific data regarding the number of intellectual property rights (IPR) registrations such as patents, according to data from WIPO, in 2021, Japan had 256,890 approved patents, which is 16% of the global total. The United States has 286,206 approved patents, about 18% of the global total. China dominates with 805,649 approved patents, more than 50% of the global total. Intellectual Property Index: According to the 2024 International IP Index, the United

States ranks first with a score of 95.48%, followed by the United Kingdom in second place with 94.12%.

Protection of Intellectual Property Rights in Indonesia

In Indonesia, to improve the protection of intellectual property rights, the Government of the Republic of Indonesia has made changes several times, especially with the inclusion of the regulation of intellectual property rights Trade Related Aspects of Intellectual Property Rights (TRIPs) which is one of the important documents produced in the Uruguay Final Round in the context of the establishment of the World Trade Organization (WTO). TRIPs aims to protect and enforce Intellectual Property Rights (IPR) laws in order to encourage the emergence of innovation, transfer and dissemination of science, technology, art and literature, so that it leads to the socio-economic welfare of the community.

In the field of laws and regulations, until 2016 Indonesia has completed all main legislation in the field of IPR, namely:

a) Law No. 20 of 2016 concerning Trademarks and Geographical Indications
b) Law Number 13 of 2016 concerning Patents
c) Law Number 28 of 2014 concerning Copyright
d) Law Number 32 of 2000 concerning Integrated Circuit Layout Design
e) Law Number 31 of 2000 concerning Industrial Design.
f) Law Number 30 of 2000 concerning Trade Secrets.; and
g) Law Number 29 of 2000 concerning the Protection of Plant Varieties.

Even though it has been regulated in laws and regulations to obtain legal certainty for creators, inventors, and designers, but in its implementation, there are still several weaknesses, namely:

The laws and regulations have not been fully socialized, so that various laws and regulations have not been understood.

The legal culture of the community, including the campus community, is still relatively low so that not every creation, invention, or design is not recorded.

The process and procedures for recording or registering are still considered bureaucratic.

Law enforcement against intellectual property rights violations is still low. From the results of interviews with respondents, it is still difficult to admit that law enforcement is in the event of a violation. The legal process, which takes a long time, is the reluctance of creators, inventors, and designers to report.

Conditions of Cooperation between Higher Education and Industry

Cooperation between Universities and Industry in increasing innovation has a very big role. The results of interviews with university and industry respondents show that there is still little cooperation between universities and industry in an effort to increase innovation. This is because: first, the value of trust in the industrial world is still low in the results of research conducted by universities, the results of research conducted by universities are considered not to be actionable in the industrial world. This condition is certainly not conducive, because the value of entrepreneurship is the basic value for the growth of cooperation between universities and industry. For this reason, it is very necessary to improve the quality of research results conducted by universities. Higher education must be able to ensure that the results of its research can be maximized by industry. Second, there is still a relatively small industrial budget for the development and implementation of research results conducted by universities, so that the research results cannot be followed up or exploited.

In several universities surveyed, there have been solutions to overcome this situation, the first is to build a qualified research institution consisting of various expertise as partners of the government, the private sector, and universities. This institution can generate funding for the development of lecturers' researches, and increase innovation results, but has not greatly improved research results that produce intellectual property that can be implemented in the industrial world.[15] This institution more or less accepts "research orders" on the applications of partners, including from private companies, university collaborations to conduct joint research with industry in this pattern are usually carried out, it's just that the position and position of lecturers in intellectual property law are considered employees so that both rights owners and holders of intellectual property rights are industries. However, the condition of cooperation depends on the cooperation agreement signed by both parties.

Second, building business incubation as the basis for research development and implementation. In business incubation, the strengthening of laboratories is getting bigger because the starting point of research must be supported by a complete and quality laboratory, relatively many experts have been fulfilled from lecturers in their fields of science. The advantage of this pattern is that the strengthening of laboratory results will further foster the value of trust in the industrial world, including MSMEs, that the research results conducted by universities are valid, and the results of intellectual property in the form of products created in the industrial world, including MSMEs, can be produced more and can expand marketing. In terms of cooperation in this second pattern, it is the same as the first pattern, but the advantages are

Third, by building a techtopark, various research results that produce intellectual property from upstream to downstream are exploited and implemented by universities. Starting from the results of research that produces patents, which then grow into products with new innovations because there is technology and invention, these products are produced in a certain amount so that they become goods and then the goods are marketed by universities themselves[5]. This third thing is a reaction to the industry's disinterest in exploiting or implementing the results of research conducted by universities, because it is considered not business-wise to be carried out. In this case, the lecturers at the university are the owners of intellectual property rights, while the university as the holder of intellectual property rights is granted a license through a license agreement with the lecturers or researchers. The advantage of this pattern is that lecturers as creators, inventors, or designers obtain economic rights, in addition to moral rights, so that they can improve welfare, and can also develop their intellectual property rights.

Agreement Within the Framework of Higher Education and Industry Cooperation

results of interviews with the heads of university research institutions that have collaborated with the industrial world

show that the distribution of royalties for the use of research results carried out by universities is not balanced, where the royalty generated from the license agreement is relatively small. Theoretically, it should be the creator, inventor, or designer who already has intellectual property rights such as moral rights that determine the license agreement, but in this case, it is the industry that determines the license agreement. Universities do not yet have high bargaining power (negotiation).

The granting of licenses is usually outlined in the form of contracts or licensing agreements. This agreement can provide protection for the parties who promise within the legal framework of the contract so that it can accommodate the interests of the parties in a contract. Contract law or covenant law governs so many parts of human life. Contracts as the basis of business transactions are increasingly important when a party will establish business transactions with other parties who are not yet known and both at home and abroad[16].

The arrangements in the field of licensing agreements have been regulated in writing in the provisions of the intellectual property rights law. License agreements are one of the media used by business actors in the field of Intellectual Property Rights to develop their businesses internationally. Usually the form of the license agreement is a standard agreement that has been formed by the foreign party as the licensor. A license agreement usually contains provisions regarding the parties, licensed objects, technical provisions, forms of supervision, term, territory, royalties, choice of law and closing provisions.

The basic provisions for licensing exist and are regulated in all laws regarding Intellectual Property Rights[17]. This licensing arrangement is intended to provide a regulatory basis for the licensing practice that has taken place and will also provide protection and certainty for the parties entering into licensing agreements and the interests of consumers or the public who use the brand of goods or services produced and traded by the licensor and licensee.

In Indonesia, the Regulation on Intellectual Property Rights is a minimum standard based on national treatment as a result of Indonesia's accession to the World Trade Organization or WTO[18]. Meanwhile, the provisions regarding licensing include all IPR legislation consisting of:

a) In the field of Patents, regulations regarding Licenses are contained in Chapter VII of the second part of Articles 76 to 107 of Law Number 13 of 2016 concerning Patents.
b) In the field of Trademarks, regulations regarding Licenses are contained in Chapter V of the second part of Articles 42 to 45 of Law Number 20 of 2016 concerning Trademarks and Geographical Indications.
c) In the field of Copyright, License Regulation is contained in chapter XI Part One Article 80 to article 86 of Law Number 28 of 2014 concerning Copyright.
d) In the field of Plant Varieties, the regulation regarding Licenses is regulated in chapter V part two articles 42 to 55 of Law Number 29 of 2000
e) In the field of Trade Secrets, the regulation of Licenses is contained in Chapter IV of the second part of articles 6 to 9 of Law Number 30 of 2000 concerning Trade Secrets
f) In the field of Industrial Design, the regulation of Licensing is contained in Chapter V of the first part of articles 31 to 36 of Law Number 31 of 2000 concerning Industrial Design.
g) In the field of Integrated Circuit Layout Design, License arrangements are contained in Chapter V of the first part of articles 25 to 28 of Law Number 32 of 2000 concerning Integrated Circuit Layout Design

In particular, the Intellectual Property Rights Law has mandated in its articles to regulate further provisions regarding licensing agreements with Government Regulations. Government Regulation of the Republic of Indonesia No. 36 of 2018 concerning the Recording of Intellectual Property License Agreements, Article 1 number 1 states that a License is a license as referred to in Law No. 30 of 2000 concerning Trade Secrets, Law No. 3l of 2000 concerning Industrial Design, Law No. 32 of 2000 concerning Integrated Circuit Layout Design, Law No. 28 of 2014 concerning Copyright, Law Number 13 of 2016 concerning Patents, and Law Number 20 of 2016 concerning Trademarks and Geographical Indications[19].

In accordance with the provisions in the package of the Law on IPR, a licensing agreement must be recorded at the Directorate General of Intellectual Property Rights which is then published in the General Register by paying a fee whose amount is determined by the Ministerial Decree. However, if the license agreement is not recorded, then the license agreement has no legal consequences for the third party.

In terms of language, licensing is rooted in the root word license. The word comes from the foreign language license which in Indonesian means a permit. The meaning contained in it is all based on the permit, although its use may differ depending on the purpose and source of the permit[20]. White (1990) presents the definition: A license is the granting permission of rights to make, use / or sell a certain product, design, or process or to perform certain other actions, the granting being done by a party who has the rights to do so. In relation to IPR, Mc Keough and Stewart (1997) say it as: bundles of rights which the law accords for the protection of creative efforts or more especially for the protection of economic investment in creative effort[21].

The above definitions have the same element, namely the granting of permission to a person or legal entity, given by a party who has the authority or right, to do something certain with that right, and its use is bound by certain conditions. The right use permission is the main characteristic, and distinguishes the license from various forms and other types of relationships[22]. With the above understanding, licensing means the activities and activities of granting and obtaining licenses.

In the civil law system, licensing as a form of agreement is basically unknown[23]. The Civil Code does not recognize licenses in the form of agreements, because licenses are foreign legal institutions that come from other legal systems that are included in the Indonesian legal system

The existence of provisions regarding this license agreement is very important in an effort to regulate in detail because in its implementation the license agreement itself is an agreement that must be registered so that many cases regarding licenses are in court and until now there are no rules, then the law of the agreement resolves it.

Because the license agreement involves the local party as the licensee/licensee and the licensor/licensor and occurs within an international framework, there is a potential for problems related to the bargaining position of the parties or the agreement itself. Even the state has a role in the implementation of licensing agreements that do not conflict with threatening the administration of the state and are contrary to the provisions of the law[24]. This role is not only limited as described above but to the point that the licensing agreement will be able to bring a stimulus to Indonesia's economic growth.

Intellectual property rights (IPR) licenses are related to the economic value inherent in intellectual works and inherent in exclusive rights for their owners. Based on this right, IPR owners can carry out their own or prohibit others from exploiting IPR (in order to obtain material value) without the owner's consent. Commercialization of IPR is a way to obtain this material value. The trick can be done with various efforts, including through the sale of assets (remember that IPR is an asset), licenses, and franchises. For IPR owners, before commercializing, they should understand the law of the agreement.

Article 1313 of the Criminal Code formulates the meaning of an agreement, namely: an act of one or more persons binding themselves to one or more persons. Meanwhile, Abdulkadir Muhammad (1992) stated that an agreement is an agreement with which two or more people bind themselves to carry out something in the field of wealth[25].

Article 1320 of the Civil Code (KUHPerdata) provides guidance to enter into an agreement. According to the article, there are 2 (two) main conditions in entering into an agreement, namely subjective conditions and objective conditions. Subjective conditions refer to the existence of an agreement for the parties to bind themselves, meaning that in an agreement there is no element of coercion, fraud or negligence. Another subjective requirement is the ability of the parties to carry out the agreement. This means that the parties are mature and not under guardianship, while regarding the object that is agreed as an objective condition, it includes the existence of a certain thing and a halal cause. The condition for the existence of a certain thing is that an agreement has an object that is determined in the form of existing and future objects (Articles 1332-1335 of the Civil Code) while the requirement for the existence of a halal cause is related to morality, public order and does not contradict the law (Article 1337 of the Civil Code).

In order to obtain more profits, the IPR Owner can grant licenses to more than one party unless agreed. This means that if it has been agreed that the IPR owner will not grant the next license to another party, then he must comply with the agreement. In Indonesia, licensing agreements in the field of IPR, the most important basic principle is not to conflict with Indonesia's economic interests and is prohibited from containing restrictions that hinder the ability of the Indonesian nation to master and develop technology[26]. This principle is intended to stimulate Indonesia's economic growth in the sense of improving the standard of living and quality of life of the Indonesian people.

Like agreements in general, licensing is also a legal event. The consent to grant a license and thus be a licensee, with all the rights and obligations agreed upon by both, is a legal event. The legal provisions of the agreement therefore apply, and the provisions of the law of the agreement also apply to them. In other literature, it is said that a license agreement is an agreement between two or more parties, where one party, namely the right holder, acts as the party granting the license, while the other party acts as the party receiving the license. The definition of license itself is a permit to enjoy the economic benefits of an object protected by IPR for a certain period of time[11].

There are types of licensing that are differentiated in several groups based on the object, nature, scope, and manner in which the licensing occurs. According to Lee and Davidson (1990), distinguishing in 2 (two) types of licenses, namely Exclusive and Non Exclusive licenses, while Dratler (1994) distinguishes the way licensing occurs, namely:

1. Voluntary Licenses, which are licenses that occur based on initiatives and due to the agreement of the licensees and licensees;
2. Non-Voluntary licenses, which are licenses that occur due to the request of the party that requires a license and are submitted to, approved and granted by the authorities determined by and with the conditions and procedures stipulated in the law. As the name implies, this licensing does take place without the voluntariness of the rights owner. Non-Voluntary licences are often called Compulsory licenses, some also call them In-voluntary licences. In Indonesian, the word equivalent given is a mandatory license or compulsory licensing. A mandatory license is a license that is required by laws and regulations or by the government to be granted by IPR owners to other parties for certain considerations. A voluntary license is a license granted by the owner of IPR to another party voluntarily without having to have a mandatory provision[27].

In terms of cooperation between Universities and Industry, from the results of interviews with the leaders of Universities and the Leaders of a company, it is stated that the licenses granted from Universities to Industry are voluntary or classified as voluntary Licences, namely licenses that occur based on initiatives and because of the agreement of the licensees and licensees.

In addition to being voluntary, the license granted by the University to the Industry is a Non-Exclusive License. The results of interviews with university leaders and industry leaders show that most of the licenses granted to the industry are Non-Exclusive Licenses, which is a form of granting rights in the form of exploitation rights of one or several rights owned by an IPR owner. Even though the owner has granted a non- exclusive license to the right holder, the IPR owner is not closed to the possibility of granting similar rights to others at the same time.

License agreements can be made special, for example not exclusive. If it is intended as such, then it must be expressly stated in the license agreement. If not, then the license agreement is considered not to use non-exclusive terms. Therefore, the right holder or licensor can basically still carry out what he licenses himself or grant the same license to another party. An exclusive license is used when the owner of

an IPR transfers one or more rights of a work or invention he owns to the recipient of the right, but still retains other rights that still exist in the IPR.

In its implementation, the most important thing in licensing is to determine the content of the license agreement. Because the sound of the agreed provisions will be very decisive for IPR holders and licensees. A good legal norm of agreement must contain a definite formulation of articles (lex certa), concise and unambiguous.

In the licensing agreement, it has the potential to bring an imbalance between the parties (bargaining position), where the licensee is in a weak position, for example, there are clauses that can be burdensome such as: provisions that require the licensee to buy raw materials from the licensee, or even the licensee is in a weak gaining position with the licensee, therefore in order for the cooperation between universities and industry to increase competitiveness, it is necessary to pay attention to:

a) Providing a sense of fairness, namely ensuring that all parties involved (universities, industries, and individual creators) get fair benefits from the results of joint innovation [2]. The problems that occur in the effort to protect the legal protection intellectual property rights licensing agreements can actually be resolved through the legal mechanism of the agreement itself by the parties so that it can provide the best legal path for the realization of a mutually beneficial agreement law between the parties (win-win solution contract), on the one hand providing legal certainty and on the other hand providing justice.
b) Providing legal certainty, namely providing clear rules for the protection of IPR in the form of patents, trademarks, copyrights, or other forms of IPR[5]. The license agreement must provide legal certainty to the parties, that anything agreed in the license agreement must be enforceable.
c) Efficient cooperation encourages effective cooperation and is oriented towards the results of innovations that are useful for society and the economy [7]. Licensing agreements that produce economic rights in the form of royalties must be able to improve the quality of innovation of lecturers and students, as well as become income for universities that collaborate with industries.

IV. CONCLUSIONS

The protection of intellectual property rights in collaborations between universities and industries is crucial, as it impacts the enhancement of innovation and the competitiveness of Indonesia's economy. Intellectual property protection has been widely implemented through the issuance of intellectual property regulations. However, in practice, the application of various intellectual property regimes has not been optimal. This is due to the fact that many faculty members, students, and university leaders still lack understanding of intellectual property laws, and enforcement remains relatively difficult because it involves complaint-based offenses, inadequate infrastructure, low legal awareness, and an underdeveloped legal culture in society. Therefore, it is necessary to: (1) Strengthen the enforcement of IP laws, which includes empowering the relevant institutions to enforce laws related to IP violations, conducting regular and targeted socialization, providing necessary infrastructure, and increasing public legal awareness and legal culture; (2) Prioritize dispute resolution through mediation and arbitration to maintain good relations between the involved parties; and (3) Improve IP literacy by mandating training and socialization on IP for universities and industries to prevent potential violations.

There are three institutional models of research developed by universities for conducting research collaborations with industries. First, the research institution designated by the university as a platform for faculty and students to conduct research and community service (LPPM); second, the business incubation institution, which is a research institution based on laboratories for developing business activities in the community, including the industrial sector; and third, the Technopark entrepreneurship institution, which is a research institution based on technology and entrepreneurship operated by the university itself and/or in collaboration with the business world and industry. Currently, these three institutions are still relatively small in their collaborations with businesses and industries, as there is still a lack of trust from the industry towards the research outcomes from universities. Therefore, universities need to improve the quality of their research outcomes as intellectual property that can be developed into competitive products[28].

Several universities, where faculty members and students have generated intellectual property, have already partnered with industries through licensing agreements to protect their intellectual property. However, there is still an imbalance in these agreements, particularly regarding royalties between the licensee and licensor, where the licensor is more dominant, and they do not yet reflect a win-win solution. Therefore, to protect intellectual property rights in university-industry collaborations and create mutually beneficial partnerships, both parties must consciously enter into agreements that are fair, legally certain, and efficient for research development on one hand and the advancement of the industrial sector on the other. Some considerations for licensing agreements include: (1) joint Copyright and Patent rights, which regulate shared rights over the innovations produced, with the distribution proportion based on each party's contribution; (2) intellectual property cooperation agreements, which mandate agreements covering the division of rights, responsibilities, and management of innovation results to avoid ownership conflicts; and (3) fair technology transfer, which ensures that technology transfer benefits not only the industry but also strengthens the capacity of universities as research institutions[29].

The role of the government in encouraging university-industry collaborations to create a sustainable collaborative ecosystem, foster national innovation, and strengthen economic competitiveness, the government is advised to: (1) issue Government Regulations on Intellectual Property Cooperation, which would form national legal guidelines facilitating collaboration between universities and industries, including dispute resolution mechanisms; and (2) provide legal incentives for innovators, such as tax reductions or financial support, to

encourage more innovation to be registered as intellectual property.

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