
Status and Contemporary Development of Employee Inventions Ownership in G-20 Countries

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Abstract:

The study discusses the ownership arrangements of employee invention in patent law system in several countries that become the members of G-20 and comparable with employee invention arrangement in patent law in Indonesia.

The research approach used by normative juridical and the data used is secondary data and used qualitative analysis. The concept of setting a clear ownership of employee inventions by relying on the doctrine hired to invent or shop rights in the adoption of the patent law system in the advanced industrial countries that become G-20 members proved able to create a climate of innovative inventions by employees of the company and also donate the progress of science and technology.

In Indonesia, the concept of employee inventions that have not been expressly provided in Article 12 of Patent Law of 2016 and has not yet adopted the doctrine hired to invent or shop rights gives the benefit of the employer/company to have exclusive rights to the patent and exploit freely on inventions resulting workers but on the other hand less can create a conducive climate for workers to generate innovative inventions.

Keywords: *patent law, employee inventions, G-20, hired to invent.*

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1. Introduction

Employee inventions are inventions produced by employees at individually owned business or enterprise. For business owners, employee inventions that are regarded as an asset company can improve the competitiveness of products and benefit enterprises. Hence, workers need recognition and reward as inventors in producing the invention. Likewise, employee inventions in the international world is not really a new thing. Advanced industrial countries have generally been regarded important of employee inventions arrangement and optimally set in the legislation. Settings employee inventions to be important because it concerns the rights of ownership of the invention produced. Employee inventions arrangement is different in national legal systems of countries in the world.

The concept of setting a clear ownership of employee inventions by relying on the doctrine hired to invent or shop rights in the adoption of the patent law system in the advanced industrial countries proved able to create a climate of innovative inventions by employees of the company and also donate the progress of science and technology. In Indonesia, the concept of employee inventions that have not been expressly provided in article 12 of Patent Law of 2016 and have not yet adopted the doctrine hired to invent or shop rights give it the benefit of the employer/ company to have exclusive rights to the patent and exploit freely on inventions resulting workers. On the other hand, it is less capable of creating a conducive climate for workers to generate innovative inventions. By using normative juridical and the secondary data and qualitative analysis, this study discusses the ownership arrangements of employee invention in patent law system in several countries that become the members of G-20 and comparable with employee invention arrangement in patent law in Indonesia

2. Employee Inventions in Patent Legal System of G-20 Countries

France: Settings employee inventions in France is mainly based on the provisions of regulation in three areas, that are (1) Intellectual Property Code (IPC) and the Labor Law Code (LLC); (2) Labor Agreement or Bargaining Agreement Collecting as an agreement for all workers in the industry; and (3) Company Agreement or corporate rules governing workers in the company, also including individual employment contract (Bouche, 2011; Avocat, 2006). The scope of employee inventions according to Article L. 611-7 of the IPC1 only apply where the worker/employee bound by the collective agreement, the company rules or employment contract (Roux-Vaillard, 2013). It is said that the invention generated by paid employees based on their employment contracts is employed to produce inventive invention and explicitly in the contract of the company that the employee is entrusted with effective function and conduct study and research, the invention of the employer is called inventions under mission. Inventions beyond mission the invention produced when working outside their normal duties and the situation is still within the scope of the invention in working in the company using the knowledge or technology, facilities and

corporate data. In this case, the invention belongs to the employee but the employer has the right of transfer of ownership, or when the invention relates to the employer's business. Outside the both missions, the inventions generated during the work period and when in the company's contract not clearly found the duties and functions to produce the invention, the invention belongs to the workers or the so-called free inventions.

China: In China, it is known for service inventions and inventions related services and does not mention the term employee or worker (Ying, 2007). Service inventions are inventions made by an employee in carrying out the work or job duties for the employer, including the discovery that is relevant to the job or task made within one year after termination of the employment relationship, or primarily employing the employer's technical material or means, the invention belongs to the employer. Service related inventions is an invention made by an employee to use the material or the employer technical means. The invention ownership are governed by an agreement between the employee and the employer (Luginbuehl and Ganea, 2014). Outside these two, the ownership of inventions belongs to workers/employees or called non-service inventions (Chiu, 2014).

Japan: In the Japanese patent law system, it is known inventions produced by employees in a so-called inventions of company workers. There are three categories of the invention, namely, free inventions, employee inventions and services inventions. Free inventions are inventions generated outside the scope of the employee who was given the task to produce inventions. Services inventions are inventions produced within the scope of business of the employer. Based on the the Asia-Pacific Industrial Property Center (APIC) from the Japan Patent Office (JPO) (2006), employee inventions pursuant to Article 35 paragraph (1) Japanese Patent Law is defined as the invention that is based on the condition of (1) an invention which for some reason is basically included in the scope of business and employers (employer); (2) a rule or regulation that causes an invention to be a part and present or previous invention which is the duty of an employee performed by the employer.

Under Japanese Patent Law, the employer shall be entitled to a non-exclusive license for the invention produced by the employee in which the invention meets such criteria as entered into the scope of the business run by the company; as a part and duty of the employee and done on behalf of the company. Hence, the patent on the invention falls into the employee's hands but the employer is entitled to a non-exclusive license without paying compensation to the employee. Employer in Japanese patent law is a legal entity and a governing body or a local government agency, while an employee is a person employed by an employer. When the invention is produced by an employee outside the scope of the assignment (free inventions and services inventions) and in the terms of the employment contract or company rules, thus the application and ownership of the patent is the employer and the assignment of the worker shall have the right of exclusive license is null and void. (Article 35 paragraph 2). Inherent ownership in the employee/worker under

section 35 from the viewpoint of the company is the 'bearing unpredictable, unclear and unreasonable burden' provision for companies (Akashi & Hirata, 2016, p. 2-4), because first, the company has a major contribution (funding and research facilities) of the invention and the company still had to carry the result in international market competition. Secondly, the company will also have the risk of not obtaining a patent if the patent application is not done earlier. Third, the possibility of a third party or company competitor that will obtain a patent. As a result, the company only obtains a non-exclusive license. In 2015, the Japanese government made changes or amendments to the provisions of employee inventions (Article 35) applicable 1 April 2016. Under the amended Patent Act, employers may become the owner of which is attached (inherent) on the discovery of the employee if there is a workplace regulations (employment agreement) or the advance contractual agreement stating that the right to obtain an inventory employable agreement will be an inherent right in the employer (Article 35 paragraph 3 amending 2015).

Germany: Early, employee inventions arrangements was stipulated in the German Patent Act, but the 1957 employee inventions dealt with separately called "Arbeitnehmererfindergesetz" and last amended in 1994 and entered into force in 1996 (Petersen *et al.*, 2010). Article 4 Gesetz über Arbeitnehmererfindungen (The Law on Employee Inventions) state that the legal system in the German employee inventions known as tied inventions/service inventions and free inventions, in which both inventions created by the worker/employee during the employment relationship agreement in the private entity or a public body. Both inventions were originally owned by the workers/employees (Goddar, 2003), but there is no obligation of workers to provide written reports to employers of all technical information relating to the invention in question and who contribute (co-inventor) of the invention (Article 5 Gesetz über Arbeitnehmererfindungen). After the report has been received within no later than the month the employer makes a written statement to the worker (inventor) that the employer will claim part of the invention or all of the invention (Article 6 Gesetz über Arbeitnehmererfindungen).

The legal consequences throughout invention claims the employer will obtain exclusive rights and in the claims of inventions in part, the employer obtained a non-exclusive rights. Unusual use and exploitation of some claim by the employer gives the employee the right to claim to the employer to claim all inventions or return the invention to the worker. The invention has no legal effect to the employer prior to the claim (Article 7 Gesetz über Arbeitnehmererfindungen). Free inventions owned by workers, that is the invention claims that no statement by the employer within 4 months after the worker notifies the result of his invention, or a portion of the invention there is no claim by the employer (Article 8 of the Gesetz über Arbeitnehmererfindungen). Workers do not have an obligation to provide notification when the invention clearly cannot be used by the employer (Article 18 of the Gesetz über Arbeitnehmererfindungen) or invention does not relate to the business of the employer (Goddar, 2014). Principles of the German legal system

give workers ownership of employee inventions to the non-legal entity because in principle the inventor is not a legal entity (Harguth,2013).

USA: Under the common law system in The United States, generally the employer/ company could not have the results of employee invention. The ownership of inventions is mainly based on the contract between the employer and workers (Cadwel, 2006). When there are no agreement concerning ownership of inventions within the scope of employee inventions, there are several options based on the common law system in force in the US. First, when the inventor was hired was to produce an invention (hired to invent) (Simson, 2012), or have signed/ agreed to complete the task in completing a job or enhance a particular job, then the employer is the owner of the invention (Lieberstein, 2013). Second, if the inventor is not employed to produce an invention, but in the course of employment, the employee generates the invention by using data or company facilities, the employee is the owner of the invention (Hunsman, 2010). Hence, employer or enterprises is eligible non-exclusive license without paying royalties. This provision is called the doctrine of shop-rights. According to this doctrine, it is granted to the employer for inventors using company facilities to produce the invention (Gupta, 2010). Third, when employees are hired specifically to produce the invention, but inventions that he made have no connection with the company's business, and the employee can prove that the invention is produced without the use of support facilities and data from the company, or guidance from the company, the employee will be the owner of the invention (<http://limegreenip.hoganlovells.com>), or referred to as independent inventions (Mergers, 1999). Generally, the exclusive right of the employer/employee/ inventor (including, discovery and repair of existing products) depends largely on whether the employer and the employee have specifically signed the full agreement and granted the ownership of the patent produced by the worker assigned to generate the invention to the employer (Kobayashi, 2010). This agreement is often called employment inventions agreement and generally signed before start jobs.

UK: The patent legal system in the United Kingdom assigns employee inventions to the employer (Wessing, 2010). There are stipulations that employee inventions: (a) was made in the context of the normal duties of employees or in performing duties falling outside normal duties, but specifically assigned to him, so the discovery may reasonably expected to result from carrying out their duties; (b) was made in the context of the duties of the employees and, because the nature of the duties and responsibilities that have a special obligation to promote the employer's business interests (Article 39 (1) the United Kingdom Patents Act 1977 Amended 1997). In addition to these two conditions is the invention owned by the employees (Article 39 (2) United Kingdom Patent Act 1977 Amended 1997). There are three circumstances be regarded as normal tasks (normal duties). First, when inventors are employees hired. Second, inventors employed to make the invention. Third, task of making invention is based on the employment contract (Colston, Galloway & Middleton, 2010). In fact, when the invention was made by employees who are not

specifically produce the invention, but in employment contracts, is required to transfer the rights in the invention to the employer. This must be done prior to any patent application filed (Bennet, 2010).

Indonesia: Indonesian Patent Act implicitly states that the invention falls within the scope of employee inventions. In other words, the invention is resulted in an employment relationship or invention produced by using the data and/ or the means available. The inventor in this case is an employee or a worker who worked for the employer. Invention, which is produced by the employee inventor in her/his tenure or when she/he was bound in an employment relationship. Inventor employee does not distinguish whether as a regular employee or in general (general employees) or the employee specially assigned to produce inventions (the employees who are employed to invent).

Likewise any resulting inventions by inventor-employee does not depend on the scope of duties of employees or workers as stipulated in the agreement. Every invention resulted by employees is on the basis of orders. In this case, the invention is not limited to whether related to the business of the employer or not. This means that invention generated by employees in the workplace specified explicitly or implicitly. Every invention produced by the employee to use the data and/ or facilities, available in his job despite his agreement not obligated to produce the invention. The scope of employee inventions in the Indonesian laws is very broad. It is not in harmony with the doctrine hired to invent set to serve as the basis of employee inventions in many G-20 countries.

There are some reasons why the legal system of patent arrangement in Indonesia from 1989 to 2016 showed no change. First, the scope of the provisions of Article 12 has caused all inventions produced by employees to be owned by employer, although the inventions produced without the use of data or the company's facilities and are not employed to result the invention. The company will have exclusive rights to the invention produced by these employees, while employees are entitled to remuneration in addition to fixed written his name as an inventor in the patent certificate. The invention that fall within the scope of this invention will be detrimental to the employee. Additionally, based on the provisions of article 12, it is stated that the inventors are not employed to produce an invention, but when in the future the employee works produce the invention using data or corporate facilities, then the ownership of the invention by the employer/ company.

Secondly, there is no arrangement of employment agreement inventions that is very important to clarify the rights and obligations of each employees and on employee inventions. The principle of freedom of contract can only harm those who have a weaker bargaining position, usually that is employee. Ownership of employee inventions by patent laws Indonesia is originally owned by the employer/ company.

Third, the lack of clarity in article 12 of the Patent Law in Indonesia that does not adhere to the principles of the doctrine of shop-right or doctrine hired to invent lead to more favorable arrangements employer or company. The doctrine shop right is the right of an employer to obtain non-exclusive license without the obligation to pay royalties to the inventor of the invention resulting in a condition: the absence of agreement between the parties earlier, the absence of an agreement which states that employees are hired to produce the invention, and the absence of specific tasks that employees must be done in order to produce an invention (Zimmerman *et al.*, 2001). The employee which has a patent on this invention and obtained exclusive rights and is entitled to give permission or license others to use the patent. The doctrine hired to invent means an employer who has hired an employee with a special purpose or a special duty to produce the invention, then the employer is fully entitled to patent inventions generated. The main logic of justification of this doctrine is because the employee has agreed with it and the employee also has to get an appropriate salary to compensate for that (Pittard *et al.*, 2013).

3. Status and Contemporary Development of Employee Inventions Ownership in G-20 Countries

Especially from the aspect of ownership, national legal system governing the employee in some G-20 countries can be classified into three categories. First, the setting stating that the ownership and the right to obtain a patent of inventions owned by employer/company, when the inventions resulted by employee is the scope of jobs, or in other words, workers are hired by employers/ companies to produce the invention. Second, the original ownership of employee inventions by workers/employees and the right to obtain a patent transferred to the employer/company based on regulatory or contractual basis. Third, there is no arrangement that regulates the employee inventions, or in practice the recognition of employee inventions ownership by employers is under contract. This practice is embraced in a common law state.

Table 1. *Type of Employee Inventions Ownership Status in G-20 Countries*

Group	Description of Ownership	Countries
A	Ownership of an employee inventions (the right to file patent application) belong to the employer.	Brazil, China, UK*, Singapore, Spain*, Italy*, France*, Netherlands*, Russia, Switzerland, Taiwan
B	The original ownership of an employee inventions belongs to the employee and while a patent or the rights to file a patent application may be transferred to the employer under regulation or contract.	Germany*, Japan, South Korea, Austria*
C	No provisions exist on employee inventions (the employer's ownership is recognized under the employment contract, common law, etc).	US, Canada, Australia, South Africa, Denmark*, Sweden*, New Zealand, Norway*, Finland*

**members of the European Union.*

The legal system governing employee inventions patented in several countries are largely based on the doctrine hired to invent and partly based on the both doctrines of hired to invent and shop rights (groups of B and C). The point of similarity in the above patent legal system is to provide compensation as workers' rights as inventor on the patent granted or at the time the patent commercialization. Establishing clear employee inventions ownership system in patent law system in countries with common law tradition can be proved by looking at the list of countries with the highest number of patent registration occupied by industrialized countries.

The conditions of employee ownership in patent law systems of many countries (Germany, Japan, South Korea and Austria) are entitled to a non-exclusive license. When employees are hired specifically to produce the invention, but the invention has nothing to do with the business of the employer, and the employee can prove that the invention is produced without the use of support facilities and data and enterprise, or guidance and counseling and the company, the employee will be the owner of the invention. The number of patent filings may also reflect the results of government policy in the field of innovation which included about employee inventions (Baudras, 2013). This can be proved with WIPO's list on to 10 countries for patent applications via Patent Cooperation Treaty/PCT.

Table 2. Patent Application in Some G-20 Countries

No.	Country	Patent Application	Percentage
1	USA	57,385	26.3
2	Japan	44,235	20.3
3	China	29,846	13.7
4	Germany (EU)	18,075	8.3
5	South Korea	14,676	6.7
6	France (EU)	8,476	3.9
7	United Kingdom (EU)	5,313	2.4
8	Netherland (EU)	4,357	2
9	Switzerland	4,280	2
10	Sweden (EU)	3858	1.8

Source: WIPO, 2015; EU: members of the European Union.

The five countries that top the list are developed countries that are concentrating on the development of technology. Moreover, based on WIPO's research, most patent applicants are occupied by technology companies which mostly come from China, Japan and South Korea.

Table 3. Most Productive Company by Patent Application

No.	Company	Country of Origin	Patent Application
1	Huawei Technologies Co., Ltd	China	3,898
2	Qualcomm Incorporated	USA	2,442
3	ZTE Corporation	China	2,155

4	Samsung Electronics Co., Ltd.	South Korea	1,683
5	Mitsubishi Electric Corporation	Japan	1,593
6	Telefonaktiebolaget LM Ericsson (Publ)	Sweden	1,481
7	LG Electronics Inc	South Korea	1,457
8	Sony Corporation	Japan	1,381
9	Koninklijke Philips Electronics N. V	Netherland	1,378
10	Hewlett-Packard Development	USA	1,310

Source: WIPO, 2015.

The legal system governing the ownership of inventions on the individual worker or worker inventor is based on the idea that intellectual creativity (inventive or invention) is an inseparable part or an unity of the individual creator or inventor (alter ego thought) or based on the idea that intellectual creativity is a personal expression of the creator or inventor based on the personality theory of Hegel (Hegel, 1821). In addition, the Hegel thought states that everyone, every human being has himself as his own and no one has the right to the privacy of others except the owner himself, including the work of his body and the work of his hands. This means that every person has the right to have all the potential inherent in his personality and the entire work (labor theory) generated (Locke, 2004). In the context of intellectual property, including patents, it is resulted from the inventor's thought to work hard to make something new or improved. Thus, the process of labor becomes considerable and beneficial (Emiliandies, 2004). Thus, a worker naturally owns the invention as a result of the working process to think through research to produce the invention.

The legal system governing the ownership of an employee invention to an employer or employer and an inventor is entitled to compensation. This arrangement was based on the notion of economic arguments (McKeough *et al.*, 2004). The recognition and reward to the economic value on creative investments are being made to exploit any intellectual work. This means that ownership of employee inventions by the employer is a reward on investment or the entire costs of research and invention commercialization costs. Based on the Market Place Theory (Keynes, 1937), that the right of compensation to the inventor of workers is a reward for the inventors while maintaining the smooth distribution of the works that are beneficial to the market, it is very important to give rewards in the form of compensation so as to encourage inventors to more exploit the creativity, so the market need will be fulfilled (McKeough *et al.*, 2004).

4. Conclusion

At least, there are two categories of setting ownership of employee inventions in patent law system in some G-20 countries, namely ownership by the employer/company and ownership by the employee inventor. Ownership of

employee inventions by the employer is when the invention is produced by the worker/employee in his employment and generate within the work scope and the invention is generated using the data and the company's facilities. Original ownership of employee inventions by workers/employees and employers can make claims and have a non-exclusive rights on an invention. Patent laws in common law systems mainly rely the employee inventions ownership based on the contract of employment inventions between inventors-workers and employers/company. The absence of a employment invention contract allows the ownership of employee invention to the employer when the invention is produced within the scope of duties of the workers. Additionally, the employer has a non-exclusive right when the invention is derived not within the scope of duties of the workers but using data and facilities belonging to employer/corporation. Outside these conditions, invention is fully owned by the inventors-workers. Employee ownership arrangements invention into national legal system in most G-20 countries are still in the corridor of the doctrine of hired to invent and the doctrine of shop rights.

More specifically in Indonesia, Article 12 of the Patent Law of Indonesia has not yet adopted the doctrine shop right, because the article does not mention the right of companies or employers to obtain non-exclusive licenses on inventions that are not included in employee inventions. The scope of employee inventions provides many advantages for companies to obtain exclusive rights in accordance with the doctrine of patent hired to invent. This is different to ownership of employee inventions in the system of patent law in many other G-20 countries that gives the ownership to the employer/ company when inventions produced by employees during the work and inventions generated within the scope of duties of the workers/employees (hired to invent). Therefore it is important to set clear limits on the scope of employee inventions in the laws and regulations with a view to protect the rights of the parties and avoid disputes prone to occur where the employee usually are in a weaker position.

Hence, almost all regulations concerning employee inventions in many G-20 countries demonstrate if there is a agreement clause stating that the employees must provide patents on all inventions produced by employees (although not the employee inventors) to the employer, it will be declared legally invalid. Moreover, the agreement that does not regulate compensation for employee inventions is also considered invalid. This is an important parts that the Indonesian Patent Act has not set. Though this such clause, it will be able to protect the employees and arbitrariness of companies that utilize the principle of freedom of contract.

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