Directions towards the Improvement of Regulatory Legislation on New Technologies and Industries in the 21st Century

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Abstract

This Article explores the issue of regulation and legislation on new technologies and industries in an integrated manner, taking it as a matter of 'regulatory legislation' and focusing on legislation. It reviews the principles of regulatory legislation on new technologies and industries, subjects of regulation and regulatory methods, and refinement of existing statutes and legal theories that impede new technologies and industries.

The principles of desirable regulatory legislation for new technologies and industries are as follows: Regulatory legislation on new technologies and industries should be temporary (temporary legislation) and step-by-step (step-by-step legislation). Measures are needed to cope with legislative invalidity and legislative gridlock on new technologies and industries. The non-blanket-delegation doctrine should be reexamined. Legislation that allows a regulatory sandbox is a legislative alternative that fits the regulatory system and the reality of Korea. In order to guarantee the regulatory equity, a regulatory equity system should be established to exclude the application of unreasonable statutes and regulations to new technologies and industries. In order to accommodate new technologies and industries, outdated and unreasonable existing legal theories, including the traditional theories of risk regulation and business patent, should be reconsidered and adjusted in line with social changes.

Keywords: Legislation on New Technologies, Regulation on New Technologies, Legislation on New Industries, Regulation on New Industries, Regulatory Legislation.

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I. Introduction

The government has adopted the Fourth Industrial Revolution as one of its major industrial policies. With the Fourth Industrial Revolution underway, new technologies and industries are rapidly developing. In the days to come, they will have a great impact throughout the society beyond our imagination. They are an important element of national economic development and bring convenience to human life. On the other hand, they create new risks. New technologies and industries will significantly affect the existing industries and there will be conflicts between the existing and the emerging industries. New technologies and industries will also have a great impact on jobs. According to legalism, matters that greatly impact the national community should be regulated by legislation. Allowing the new technologies and industries, a legal order should be established to regulate them. In addition to enacting laws that accommodate new technologies and industries, statutes that hinder their introduction need to be amended. The State has to regulate them for the public interest such as safety and environmental protection. The important matters concerning regulations on new technologies and industries should be governed by law. When there are conflicts of interests among the subjects of law over new technologies and industries, the State should mediate them by legislation.

While the demand for such regulation and legislation is very high, its regulation and legislation are not easy. The impact of new technologies and industries on the society is greatly uncertain. These technologies and industries are so new and innovative that we have never experienced them before. They continue to develop, and their speed of development is very fast. Given the gravity of their impact on the society, it is not allowed to let them be in a non-regulation and non-legislation state until they are completed and their impact on the society is clearly identified. However, it does not mean that the government should prohibit them until they are proven to be safe. Their safety may be strengthened as they develop. The technology and the legal system to assess their risks will also develop simultaneously with their development.

In the twenty-first century, we will see the rapidly continuing development of new technologies and industries that mankind has never experienced. Accordingly, the demand for regulation and legislation on them will grow. Regulation and legislation themselves are also required to innovate in proportion to the innovativeness of new technologies and industries. So far, there have been

quite a number of studies on regulation of new technologies and industries. On the contrary, there have been few studies on legislation for them. Regulation and legislation are distinct in concept, but they are also closely related. Important matters out of regulations should be set by legislation. However, there are also many regulations which do not take the form of legislation. Non-legislative governmental regulation and self-regulation are governed by legislation in some cases, but in other cases, they can be possible even without legal grounds. Non-legislative regulation can become a stage before legislative regulation, and non-legislative governmental regulation and self-regulation supplement legislation to contribute to achieving legislative purposes.

For this reason, this article explores the issue of regulation and legislation on new technologies and industries in an integrated approach, taking it as a matter of 'regulatory legislation' and focusing on legislation. The principles of regulatory legislation for new technologies and industries, the subject of regulation and regulatory methods, and the improvement of existing statutes and legal theories that impede new technologies and industries will be considered.

II. Directions of Regulatory Legislation on New Technologies and Industries

A. Principles of Regulatory Legislation on New Technologies and Industries

Today, the pace of development of new technologies and industries is very fast, and competition for them among countries and among businesses is getting fierce. Accordingly, prompt legislation on them is required. However, it is not easy to promptly enact legislation that governs new technologies and industries because they continue to develop and their impact is often uncertain. Difficulties in mediating stakeholders' interests will also delay legislation. Under the positive regulatory legislation system,[1] the introduction of new technologies and industries will be delayed if legislation on them is delayed. Meanwhile, if regulatory legislation is delayed under the negative list regulatory legislation system,[2]

1 Positive regulatory legislation system means a way of regulatory legislation that prohibits all emerging technologies and industries that are not allowed by law and permits them after they are legislated.

2 Negative list regulatory legislation system means a way of regulatory legislation that allows anything not

they will be allowed, but the public interest such as safety and environment can be sacrificed. Even after regulatory legislation on them is enacted, the need to supplement or amend it continues to be raised due to mistakes in predictions or constant changes in the legislative environment.

Therefore, it is necessary to take measures to cope with legislative vacancy[3] and legislative gridlock on new technologies and industries. Regulatory sandbox is a system that temporarily allows new technologies and industries which current laws do not allow formally by the decision of administrative agencies based on the law until formal regulatory legislation is enacted.[4] Regulatory sandbox is a system that, when the safety of new technologies and industries is not clearly recognized yet[5] and information is not enough to enact regulatory statutes, specific administrative decisions (temporary permission) by administrative agencies allow new technologies and industries temporarily until formal regulatory statutes are enacted. Regulatory sandbox is recognized by four Acts.[6] The contents of the regulatory sandbox include prompt verification of regulatory statutes, regulatory exceptions for demonstration, temporary permission, certification of conformity of new products for industrial convergence, etc. Administrative agencies need to complement legislative invalidity or legislative gridlock by actively utilizing autonomous administrative legislation methods including guidelines, discretionary rules, and interpretation rules, and informal regulations including

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listed as prohibited by law. On the contrary, negative regulation refers to allowing emerging technologies and industries first and then regulating them afterwards. (Jae Kwang Kim, *Implications in Relation to Law of Administrative Action ― Focusing on Comprehensive Negative Regulation System*, 38.2 Chonnam L. Rev. 174 (2018); Seung-Pil Choi, *Eine Rechtliche Studie über Deregulierung [A Study on the Law of Deregulation],* 12.1 Pub. L. Jour. 331-332 (2011).

3 Legislative vacancy means a state in which a necessary law is not enacted. It may be intended by the legislator and it may be unintentionally caused by the incompetence of the legislator.

4 Therefore, it is reasonable to regard regulatory sandbox as having the nature of a system to overcome legal obstacles to new technologies and industries due to legislative gridlock under the positive regulatory legislation system. (Kyun Sung Park, *Legislative Challenges and Legislature's Countermeasures in the Era of Industry 4.0 - Focusing on Maintenance of Legislative Methods and System*, 11.2 Jour. L. & Econ. Reg. 235-236 (2018). On the other hand, not a few views (https://blog.naver.com/jhnyang/221528344275) take regulatory sandbox as a kind of negative regulation in that new technologies and industries are allowed first, and then regulatory legislation is enacted later.

5 This refers to a state in which technology ensuring the safety of new technologies and industries has not been fully developed and their safety has not been proven.

6 Industrial Convergence Promotion Act, Special Act on Promotion of Information and Communications Technology, Vitalization of Convergence thereof, Etc. (cited as the "Information and Communication Convergence Act"), Special Act on Support for Financial Innovation (cited as the "Financial Innovation Act"), Act on Special Cases concerning the Regulation of Regulation-Free Zones and Special Economic Zones for Specialized Regional Development (cited as the "Regional Special Zone Act").

administrative guidance,[7] warnings, etc.

To protect the public interest such as safety, it is ideal to prepare regulatory legislation first and allow new technologies and industries later. In other words, the policy of "regulatory legislation first, permission later" is ideal. However, such a policy may delay and hinder the introduction of new technologies and new industries since a perfect regulatory legislation takes time to complete, The risks of new technologies and new industries are often uncertain, making it difficult to identify them quickly. It is very difficult to predict their impact on the society and their future. Also, the risk of new technologies changes as they continue to develop. With technological development, technologies that reduce the risk of new technologies and increase safety can also be developed stage by stage. Therefore, it is either impossible or difficult to enact a perfect law on new technologies and industries from the very beginning. On the other hand, since the competition among countries and among businesses over new technologies and industries is fierce, the policy of perfect regulation first and permission later on them may cause a problem in terms of enhancing the competitiveness of the country and the business. Given these circumstances, new technologies and industries whose impact such as safety has not been proven with scientific clarity, also need to be permitted first with minimal safety guarantees, except in special cases.[8] Besides, new technologies and industries that are not legally prohibited in a free market economy should be allowed in light of freedom of business unless they are prohibited under the statutes of the time.[9] Therefore, in terms of the development of new technologies and industries, the principle of 'permission first, regulation later' is reasonable.

However, permitting new technologies and industries without regulations is also problematic. New technologies and industries that are permitted before regulation in a non-regulatory state may result in damage to the public interest such as safety. In that case, negative public opinion on new technologies and industries and on the need for their regulation will grow. Accordingly, if regulatory legislation is enacted to prohibit or severely restrict new technologies and

7 It means recommendations by administrative agencies and information furnishing.

8 This refers to cases where the risk of new technologies and new industries may cause significant damage that cannot be recovered, and where the need for their prompt introduction is not great.

9 If there are no existing laws to impede new technologies and new industries and to be applied, the technologies and industries can be implemented without legislation of new regulatory statutes unless they violate the existing ones. For example, this is the case with Bitcoin. It is not a currency, and its transactions are not finance.

industries after investments are made, the investors will sustain heavy damages. On the other hand, the policy of "regulation first, permission later" delays the entry of new technologies and industries into the market, but ensures predictability and legal stability. Thus, rather than unconditional 'permission first, regulation later,' 'gradual permission, gradual regulation' or 'step-by-step permission, step-by-step regulation' is a more reasonable regulatory principle for new technologies and industries. Rather than the unilateral 'permission first, regulation later' principle, it is desirable to decide whether and under what conditions permission is granted and to legislate regulatory statutes step-by-step depending on the situation of new technologies and industries, In legislating the regulations on new technologies and industries, difficulties and errors in predicting the impact of new technologies and industries should be presented, and the continuous change and development of the targeted technologies and industries should be reflected. Also, legislation should be enacted in consideration of the possibility that insufficiencies such as safety in the initial stage may be resolved gradually as the technologies and industries develop. It is also possible to first impose a loose advance regulation temporarily and then a formal *ex post facto* regulation on new technologies or new industries. Thus, regulatory legislation on new technologies and industries in the Fourth Industrial Revolution should be temporary (temporary legislation)[10] and step-by-step[11] (step-by-step legislation).[12]

In conclusion, if advance legislation can be carried out promptly, it is reasonable and desirable to permit new technologies and industries after the advance regulatory legislation. If prompt legislation for advance regulation is hard, advance permission is reasonable on the premise of temporary regulation that guarantees minimum safety, etc. If new technology or new industry is quite likely to cause an irreversible serious risk, permission should be given after safety is proven. When the risk of new technology or new industry is not great, new technology or new industry should be permitted in principle on condition of ensuring minimum safety. Legislation that permits regulatory sandbox in general can satisfy both the demand that new technologies and industries be allowed promptly and the demand that the public interest such as safety be guaranteed at

10 Temporary legislation means a legislation that is incomplete and carried out while reserving the possibility of a completed legislation whose content differs from that of the temporary one.

11 Step-by-step legislation means a legislation method in which legislation is not completed at a time but goes through multiple stages before a final complete legislation.

12 Tae Oh Kim, *Exploration of Regulatory Paradigm to Lead the Fourth Industrial Revolution: Current Development in Korea*, 10.2 Jour. L. & Econ. Reg. (2017).

a minimum. And it is a legislative alternative suitable for the regulatory system and the regulatory realities in Korea.

B. Selection of Subject of Regulation and Methods

It conforms to the principle of constitutional state that important matters concerning regulation are to be prescribed by legislation. Significant matters concerning regulations on new technologies and industries should be prescribed by law.[13] However, it is difficult to enact regulatory laws on new technologies and industries. That is because conditions for legislation may often not be ripe as the substance and impact of new technologies and industries are not sufficiently identified. Also, such information on new technologies as risks may be scant. Hasty regulatory legislation may impede the development of new technologies. In that case, the legislature may select 'intended vacancy of legislation.'[14] In other words, instead of enacting regulatory laws on new technologies and industries, the legislature may leave the regulation to the administration's regulation (governmental regulation) and the developer's self-regulation.

Besides, the legislature also implements legislative policies to regulate new technologies and industries by embracing them into the existing regulatory statutes as much as possible before enacting new laws. Among others, one example is a legislative policy that flexibly defines the existing regulatory laws to embrace new technologies and industries. A typical legislative policy in this direction is the "flexible classification system." "Flexible classification system" means having legislated a flexible classification of products to accommodate new types of new products. It refers to a legislative method which, for example, enables prompt acceptance of a new type of a two-wheeled vehicle when it emerges by classifying not only "[a] two-wheeled motor vehicle ... [which is] suitably manufactured to transport one or two persons, regardless of the size of total displacement or rated output of a motor vehicle" but also "other motor vehicles similarly structured thereto" into a two-wheeled vehicle.[15] Also,

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13 The Framework Act on Administrative Regulations declares principle of regulation by Acts (art. 4).

14 "Intended vacancy of legislation" means that a legislator intentionally does not legislate, but leaves legal discipline on a certain matter to informal regulations, such as interpretation and application of the existing statutes, judicial precedents or self-regulation. When the conditions for legislation are not ripe, an agreement on the contents of legislation is hard to reach, or the contents of the norms may vary as society develops, the legislator may not legislate intentionally.

15 Jadongcha Gwanri beob [Motor Vehicle Management Act], Act No. 16305, Apr. 3, 2020, art. 3(1) para. 5 (S. Kor.).

comprehensive regulatory legislation,[16] which prescribes objects of regulation in a general or abstract way instead of listing them, may embrace situational changes which are caused by new technologies and not predicted at the time of legislation. However, since the comprehensive regulatory legislation prescribes regulatory standards in a broad and abstract way, only an active and a proper exercise of the authoritative interpretation and discretion of the executive power can achieve the desired legislative purpose. In addition, as comprehensive regulatory legislation leaves room for interpretation, unclear regulation may cause the decrease of predictability, and arbitrary interpretation and corruption by public officials can intervene. Therefore, securing the expertise and ethics of public officials is a prerequisite for its introduction. Besides, if the 'flexible classification system' or the interpretation of comprehensive regulatory legislation applies the existing legislation to a new type of technology or product and permits it without a separate legislative action, permitting it under the acceptance conditions prescribed by the existing statutes may cause a problem that the technology or product does not work properly. Since the existing statutes do not fully reflect the distinctiveness of new technology or product, their regulation of the technology or product may cause unreasonable consequences. Therefore, in case that new technology and new industry are permitted under a flexible classification system, it should be allowed to keep unreasonable provisions in the existing regulatory statutes from application through authority delegation or recognition of special cases for regulation which will enable special regulations to govern a new type of product so that the regulations can assort with the characteristics of the new product.

Given the characteristics of new technologies and industries as mentioned above and the legislative capacity of lawmakers, it is not easy to enact prompt regulatory legislation on new technologies and industries, and even if the legislation is enacted, it is not easy to enact a perfect legislation from the beginning. Thus, it is required that statutes should prescribe principles or fundamental matters only and the legislative powers should be comprehensively delegated to the executive powers or broad administrative discretion should be recognized. Accordingly, the non-blanket-delegation doctrine[17] should be reconsidered. Given the difficulties of the regulatory legislation due to the characteristic uncertainty, abruptness,

16 A legislation method that contrasts with a comprehensive legislation is to list the objects of legislation specifically. (Kyun Sung Park, *Seeking Change Replacing Uniform Regulation with Equitable Regulation*, 43.4 Pub. L. (2015).

17 It refers to the principle that comprehensive delegation of the legislative power to the administrative branch should be prohibited and the delegation should be specific.

convergence, and diversity of new technologies and industries, the doctrine needs to be relaxed before application. Moreover, a system to reserve the parliamentary approval or consent should be introduced, and in this case, it is reasonable not to apply the doctrine. When the authority for approval or consent is reserved, blanket delegation can be regarded as not infringing on the principle of separation of powers or the principle of parliamentary legislation, as the National Assembly makes the final decision on the effect of administrative legislation. Therefore, it is necessary to amend the Constitution in a way that allows comprehensive delegation when the legislative powers are delegated to the executive branch with the authority to consent or veto reserved to the National Assembly. Furthermore, if it is conditioned that a delegated order be approved by the National Assembly in a comprehensive delegation, there is room for interpreting the delegation as not against the non-blanket-delegation doctrine under the current Constitution. For new technologies and industries, it is desirable to tighten the control over administrative rulemaking while, if necessary, recognizing broad delegation of the legislative power, rather than limiting the scope of power delegation to guarantee the legislative power of the National Assembly. Instead of taking administrative rulemaking as a necessary evil, it is important to ensure the legislative power and control the abuse of administrative rule-making power by actively recognizing administrative rulemaking as necessary and strengthening the legislature's control over administrative rulemaking.[18]

Next, there are cases where principle-based regulation by legislatiom and regulation by soft law, including guidelines of the administration that embody the regulation by law, are desirable for new technology and new industry.[19] One of the advantages of regulation by guidelines is that guidelines can be quickly revised as the times change, and that in special circumstances where their application is not proper, decisions other than the guidelines can be made without revising them. If counterparts of regulation by guidelines comply with the guidelines, it will give them the effect of being able to avoid punishment or sanctions even in case of violating statutes because the cause attributable to them cannot be acknowledged,

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18 Administrative rulemaking should be subject to tighter procedures and wide judicial control. Increased transparency of the administrative rulemaking process can also be a way to control the abuse of administrative rulemaking.

19 *See* Kwan Hoon Kwak, *The Paradigm Shift of Regulations on the Financial Markets: Possibility of Introducing Principles-based Regulation*, 25.3 Com. Cases Rev. (2012); Kwan Hoon Kwak, *The Possibility and Limitation of Soft Law as a Regulatory Tool for Corporation - Focus on Corporate Governance Code*, 18. 1 Kor. Jour. Sec. L. (2017); Nansulhun Choi, *Legal Effects of Soft Law Instruments in EU Competition Law*, 16.2 Inha L. Rev. (2013).

which may ensure legal stability and predictability to counterparts of the regulation.[20] However, in the principle-based regulation, as it is important for the administrative agencies of the regulation to properly exercise their regulatory power, the expertise and the sense of mission of the public officials in charge are required.

Finally, there is a way for legislators to comprehensively delegate the regulatory power on new technologies and industries to the administrative power. Current regulatory sandbox is this method. Regulatory sandbox is a regulatory innovation system that fits Korea's legal system and national sentiment in that it can guarantee the public interest such as safety and environment while embracing new technologies and industries. However, it is a problem that there is a possibility that formal permission may not be obtained without any justifiable ground after temporary permission. If regulatory legislation is not prepared after temporary permission, formal permission cannot be obtained. Even if regulatory legislation is enacted after temporary permission, there can be unfortunate cases where formal permission is not given or delayed due to disputes between Ministries concerned in the official approval stage. If measures for the existing rival industries are not taken, formal permission may not be given in the face of resistance from the existing industries, as shown in the resistance of the existing taxi industry to the new innovative one. Ways should be sought to let temporary permission given unless there are special circumstances such as critical safety issues, for products or services that have been temporarily permitted. Legislators should try to amend statutes that hinder formal permission, and administrative agencies should grant formal permission unless there are special circumstances, such as seriously harming the public interest.

If legislative regulation and the government’s official regulation on new technologies and industries are insufficient, there may be an absence of regulation. It is necessary to develop and apply informal regulatory methods to fill the absence of formal regulations. Above all, it is necessary to strengthen the self-regulation. Enterprises should maintain the order on their own and ensure the public interest through self-regulation. Self-regulation also has the function of allowing appropriate regulations by reflecting the characteristics and diversity of businesses. As enterprises regulate themselves autonomously, self-regulation also has the advantage of enhancing the effectiveness of regulation if it is run

20 However, the issue that this method of regulation goes against the principle of parliamentary legislation and the principle of statutory reservation may be raised.

well. However, in case enterprises or business associations have a weak sense of social responsibility and pursue only their own interests, it is hard to ensure the effectiveness of self-regulation. Therefore, for a successful self-regulation system, enterprises should have a high level of ethics and social responsibility, and the democracy and transparency of self-regulation should be secured. However, the reality in Korea is that these conditions for successful self-regulation are quite insufficient. Therefore, when self-regulation is recognized, it should be combined with fostering the conditions to ensure the its effectiveness. In addition, for the areas where self-regulation is insufficient, the government should intervene in some part, supplement the system and guarantee the public interest. If conditions for self-regulation are not arranged, the controlled self-regulation[21] in which the government directs and supervises the system should be taken rather than acknowledging self-regulation completely. Regulation by guidelines and regulation by administrative guidance are often criticized as shadow regulation, but since they are possible without the ground of statute, administrative agencies need to supplement the lack of regulatory legislation, governmental regulation, and self-regulation through guidelines and administrative guidance when there is a void in legislation.

Until now, only regulation by public law has been viewed as official regulation, and regulation by civil law (civil liability) and criminal regulation (criminal punishment) have not been considered as regulatory means. However, in case that regulation by public law is insufficient, regulation by civil law and criminal regulation can perform the function of maintenance of order and public interest guarantee at a minimum. Therefore, if regulation by public law is insufficient, efforts should be made to achieve regulatory purposes through regulation by civil law and criminal regulation. The problem is that unlike the United States, Korea has weak regulation by civil law[22] and criminal regulation, so the functions of maintaining order by civil and criminal regulations and of guaranteeing the public interest are inevitably insufficient. As new technologies and industries may be allowed without government regulation or under insufficient government regulation in not a few cases, regulation by civil law and criminal

21 There are also views that regulated self-regulation should be introduced to realize the State's guarantee responsibility (Gewährleistungsverantwortung). (Seung Pil Choi, Dae In Kim, and Hyun Lim, *Regulation System and Governance Reorganization according to the 4th Industrial Revolution - An Approach with Focus on Administrative Law Theory*, A Study on Improvement of Regulatory Legislation on New Growth Industries (I) Part 3, 92 (Korea Legislation Research Institute, 2017).

22 To be compensated for damages caused by an unlawful act, the victim must prove negligence, and only the proven damage is compensated.

regulation should be strengthened. Stricter civil responsibilities and criminal responsibilities including punitive damages and strict criminal liability should be able to be recognized.

Finally, as regulatory means are interrelated, they need to be utilized in an integrated manner. Regulation on new technologies and industries needs cooperation between the National Assembly and the administration, and cooperation between the government and the private sector. Integrated utilization of regulation by public, private, and criminal laws is needed.

III. Improvement of Impeding Statues and Legal Theories

A. Revision of and Immunity from Unreasonable Impeding Statues

Even if legislation is prepared to accommodate and regulate new technologies and industries, it is difficult to properly introduce new technologies and industries if the existing statutes and regulations have those which prohibit or restrict the introduction. Therefore, legislation to accommodate and regulate new technologies and industries should be prepared, while the existing statutes and regulations that impede acceptance of new technologies and industries are examined and at the same time, the existing unreasonable statutes that hinder new technologies and industries should be amended or abolished.

It takes a lot of time to amend statues that hinder new technologies and industries. Legislative gridlock should not unfairly delay the introduction of new technologies and industries. Regulatory exception for demonstration[23] and temporary permission[24] can be used to solve the problems. In regulatory

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23 The term "regulatory exceptions for demonstration" means not applying all or part of the relevant regulation to a new product of industrial convergence or service of industrial convergence (hereinafter "new product or service of industrial convergence") for tests, verifications, etc. of the new product or service when it is impracticable to conduct business because it is impossible to apply for permission, approval, certification, verification, authorization, etc. (hereinafter "permission, etc.") for the new product or service under other statutes or regulations; because the statutes or regulations applicable to permission, etc. do not provide for standards, specifications, requirements, or the like; or because it is inappropriate to apply thereto the standards, specifications, requirements, or the like under relevant statutes or regulations (Saneob yoonghab chokjibeob [Industrial Convergence Promotion Act], Act No. 15828, Jan. 17, 2019, arts. 2, 8 (S. Kor.)).

24 It means permission, etc., temporarily granted for a specified period if safety is ensured, where the statutes or regulations applicable to permission, etc. for the new product or service of industrial convergence do not

exceptions for demonstration, "where it is inappropriate (unreasonable) to apply the standards, specifications, requirements, or the like specified in the statutes or regulations applicable to permission, etc., to the relevant new product or service of industrial convergence," it is possible not to apply all or part of the relevant regulation to the new product or service for tests, verifications, etc. of the new product or service.[25] In temporary permission, where it is inappropriate (unreasonable) to apply the standards, specifications, requirements, or the like specified in the statutes or regulations,[26] it is possible to grant permission temporarily for a specified period if safety is ensured. However, regulatory exceptions for demonstration are limited to "tests, verifications, etc. of the new product or service," and temporary permission has a limitation that it is not formal but temporary.

If the existing statutes are severely unreasonable, it is necessary to introduce a system that does not apply them to formal permission, etc., either, without limiting their application to tests and verifications, and a system that enables this is the regulatory equity system. The term "regulatory equity system" means a system in which regulatory standards are generally valid on their own, but where a uniform application of the regulatory standards specified in statutes in a particular individual case results in inconsistency with the purpose of the regulation and severe inequity, the relevant regulatory standards are not applied, and an equitable administrative measure (a measure for exclusion from application) is allowed to be taken in accordance with the purpose of regulatory legislation.[27] Certification of compliance of the new product of industrial convergence under Article 13 of the Industrial Convergence Promotion Act can be said to amount to it. If a manufacturer, etc. of the new product of industrial convergence fail to obtain any permission, etc. under a statute or regulation relating to a new product of industrial convergence because it is inappropriate to apply the standards, specifications, requirements or the like specified in the statutes or regulations

provide for standards, specifications, requirements, or the like; or where it is inappropriate to apply thereto the standards, specifications, requirements or the like under relevant statutes or regulations (Industrial Convergence Promotion Act, arts. 2, 9) (S. Kor.)).

25 Industrial Convergence Promotion Act, art. 10-3 (1) 2; Jeongbotongshin yoonghab beob [Information and Communication Convergence Act], Act No. 15786, Jan. 17, 2019 art. 38-2 (1) 2 (S. Kor.).

26 Industrial Convergence Promotion Act, arte 10-5 (1) 2 (S. Kor.); Information and Communication Convergence Act, art. 37 (1) 2 (S. Kor.).

27 For further details, *see* Kyun Sung Park, *Legal Issues and Challenges of Introducing Regulation Equity System*, 51 Pub. Land L. Rev. (2010); Won Woo Lee, *Einführung von Billigkeitsmaßnahmen und Härteklauseln als Vorschlag zur Besseren Regulierung [Introduction of Equity Measures and Hardship Clauses as a Proposal for Better Regulation]*, 27 Admin. L. Jour. (2010).

applicable to permission, etc., to the new product of industrial convergence, he or she may file an application for the certification of compliance of the new product of industrial convergence (hereinafter "certification of compliance") (Article 11, paragraph (1)). If the head of the competent central administrative agency that receives an application for the certification of compliance of the new product of industrial convergence has no specific problem in the aspect of safety, etc. and can establish standards, specifications, requirements, or the like that are suitable or applicable to the new product of industrial convergence when he or she considers the characteristics of the new product of industrial convergence, he or she shall certify compliance without delay after an examination for certification of compliance (Article 13, paragraph (1)). In certifying compliance pursuant to paragraph (1), the head of the competent central administrative agency may attach necessary conditions to the certification in order to secure the safety, etc. of the new products of industrial convergence (paragraph (2)). When the head of the competent central administrative agency certifies the compliance of a new product of industrial convergence pursuant to paragraph (1), the permission, etc. shall be deemed obtained under the statute or regulation applicable to the permission, etc. (paragraph (3)). However, although there is a limitation of the case that has no specific problem in the aspect of safety, etc., it is thought as giving an administrative agency excessively strong authority to let a formal permission to the new product of industrial convergence granted only on the ground that application of the standards, specifications, requirements or the like specified in the statutes or regulations to the new product of industrial convergence is 'inappropriate.' It is reasonable to permit the certification of compliance only in cases where application of the standards, specifications, requirements or the like specified in the statutes or regulations to the new product of industrial convergence is 'severely unreasonable' or 'clearly unreasonable,' and acknowledge just temporary permission in case of being 'simply unreasonable.'

B. Changes in Outdated Legal Theories

As the society develops, not only legal systems but also legal theories should develop. Outdated legal theories can be an obstacle to the application of statutes as well as to the new legislation. In order to accommodate new technologies and industries, outdated and unreasonable legal theories should be adjusted in line with social changes by reconsidering the existing legislative theories and execution theories. Hereinafter, risk theory and academic theory on business

patent will be reviewed.[28]

1. Changes in Risk-related Legal Theories

New technologies and industries cause emerging risks that have never been experienced before. In many cases, these risks caused by new technologies and industries will often be difficult to grasp the identity precisely. Given this, it may not be appropriate to strictly apply conventional legal principles concerning risk and safety. According to the traditional theories of police administration law (order administration law),[29] permission to new technologies and industries should be given in a state of safety being secured, and they can be prohibited or restricted only when specific risks are proven.

Above all, considering uncertainties in risks by new technologies and industries and insufficient information on the risks, it may not be reasonable to grant permission to new technologies and industries when complete safety is guaranteed. Therefore, it is desirable to give temporary permission to new technologies and industries first after minimal safety is guaranteed through risk assessment procedures that scientifically assess the risk of the technologies and industries, and then to strengthen safety as they develop. The risks of new technologies and industries should be regulated in consideration of the possibility that insufficient safety in the early stage of new technologies and industries may be resolved as they develop.[30] In granting temporary permission to new technology or industry, temporary conditions for securing safety should be added,[31] and safety

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28 In addition, the development of legal theories on administrative organization and administrative action to promote integrated administration is necessary. A system for cooperation between relevant ministries to emerging technologies and industries should be established, and the silo mentality of public officials, such as departmental egoism, should be reformed. In the case of a 'combined permission' that requires authorization and permission from various administrative agencies for one business, it is necessary to arrange measures to simplify and promote the relevant combined permission. As such measures, the joint permission system where the relevant authorizing and permitting agencies jointly grant permission, and the legal fiction system of authorization and permission where other authorization and permission specified in the statutes or regulations are deemed as if they were granted when the major authorization and permission are granted should be introduced into the combined permission to the convergence industry.

29 It is the legal principle of the traditional police (order) administrative law that regulatory authority can be invoked only when the risk is specific and probable.

30 Even if the safety of new technology is somewhat insufficient, it may be possible to recognize its introduction on the condition that the insufficiency will be complemented if it is expected that technology can develop to address the insufficiency within years.

31 It may be possible to consider a measure where the subject of new technology and new industry submits a safety analysis report and concludes a safety agreement with the competent administrative agency based on the report, and then temporary permission is granted on that condition.

should be gradually strengthened depending on accumulation of information on risks, technological development, and circumstantial changes.

It is troubling to decide who will analyze the risks of new technology. There is an option where enterprises, developers of new technology, analyze risks first and then administrative agencies assess the analysis, and there is another option where the government directly analyzes and assesses the risks of new technology from the beginning. For an objective analysis and assessment of the risks of new technology, the second option where administrative agencies directly analyze and assess risks is preferable. In order to adopt such a measure, administrative agencies must have capabilities for risk assessment. If the capability is low, it is hard to adopt such a measure. It should also be considered that in Korea, it is difficult to burden developers with the entire cost of risk assessment by administrative agencies because of the administrative notion that administrative expenses for the public interest should be borne by administrative agencies in principle. Taking these into consideration, it is desirable to have developers analyze and evaluate risks of new technology and product first, and to have administrative agencies assess the adequacy of the analysis and evaluation. The scheme is also valid in that it is necessary to have developers of new technologies devise risk-reduction measures as they develop technologies. In that case, administrative conditions should be created so that administrative agencies can objectively assess risks of new technologies without being captured by developers, as developers typically focus on enhancing the performance of technologies and may neglect ensuring safety.[32]

When new technology or new product has a risk to cause irreversible serious damage, the precautionary principle should be applied despite the uncertainty of the risk if there is a scientifically reasonable doubt about the risk.[33] And in that case, a credible agency should be made to assess the risk.

2. Reexamination of Business Patent Theory

Korea's traditional theories and precedents on the statutory regulation of business distinguish between "licensed business" and "patented business."

32 The expertise and ethics of public officials in charge of risk assessment in the relevant administrative agencies should be enhanced and risk assessment institutions should be established to support administrative agencies.

33 Kyun Sung Park, *Une Étude sur L'application du Principe de Précaution au Risque Technologique [A Study on the Application of the Precautionary Principle to Technological Risk]*, 21 Admin. L. Jour. (2008).

Licensed business is originally free business, but it should meet the requirements for permission prescribed in statutes and regulations, including safety, and can be run only when the relevant administrative agencies grant permission. Contrary to this, as patented business is of great public interest and originally not free business, and can be made possible only by business patent of administrative agencies, it was regarded as acquiring an exclusive business right due to the patent. Accordingly, business profit that a licensee enjoys from its licensed business was regarded as reflective benefit which is not directly protected by statues and as *de facto* benefit. Contrary to this, the right of business obtained from business patent was deemed to be protected by statues as an exclusive business right.[34]

The theory of business patent is being discussed as an important legal ground for the prohibition or restriction of innovative type taxi business such as "Tada" taxi business,[35] which is recently being attempted to introduce. That is, as a taxi license is a business patent, the right of business of the existing taxis should be exclusively protected.[36] The supply of patented business is restricted in consideration of demand for transportation according to the current statutes and regulations on taxi transportation business and the existing business patent theory in order to protect patented business operators' exclusive right of business. In the past, the Act itself explicitly recognized the monopoly of patented business or limited the supply of patented business, but in recent years, the supply of patented business has been limited by the administrative discretion granted by the legislator. The argument for such restriction on the supply of patented business is as follows: unless the supply of patented business is restricted, consumers will suffer from excessive competition among operators. In other words, the ultimate goal of restricting the supply of patented business is not the protection of patented operators' interest, but that of consumers'.[37] Recently, however, not the protection of consumers' interest but that of patented operators' is being discussed as the reason for the restriction of innovative type taxi business. Behind

34 The Constitutional Court viewed fishing license as granting the right to manage fishing proprietarily and exclusively for a long period of time (Constitutional Court [Const. Ct.], 99Hun-Ba81, Mar. 21, 2001, etc. (S. Kor.)).

35 "Tada" taxi business is a business model that operates in the form of renting a van with a capacity of from eleven to fifteen passengers alongside a driver. It seemingly operates in a form of rental, but its substance is similar to that of the taxi transport business.

36 Actually, a private taxi license is subject to purchase and sale, which is recognized by law.

37 It is necessary to emphasize that the protection of the right of business of a patented operator is not originally intended to protect private interest, but to protect the interests of consumers by preventing excessive competition and ensuring that the relevant public interest business is properly and continuously provided.

this argument there is the patented business theory, more precisely, the theory of patented operators' exclusive right of business. Indeed, there was opposition of the existing taxi industry to the emergence of a new innovative type taxi business. The "Taxi-Carpool Grand Social Compromise Organization" formed under the government's initiative to resolve conflicts between innovative type taxi operators and the existing taxi industry, reached an agreement on March 7, 2019, that a regulatory innovation type platform taxi will be launched in the first half of the year and a plan to reduce super-aged drivers' private taxis will be arranged. Also, as a measure to adjust the conflict of interests between the innovative type taxi business[38] and the existing taxi business, the Ministry of Land, Infrastructure and Transport is proposing a plan to receive contributions in proportion to the number of vehicles and support the existing taxi industry instead of issuing licenses to innovative taxi companies to allow passenger transportation business, and to set and manage the total number of vehicles operated by innovative taxi companies, just like existing taxis. And there was an amendment to the Passenger Transport Service Act on April 7, 2020, which established the Passenger Transport Platform Project[39] to institutionalize platform taxis but prohibited 'Tada' taxi business.[40] And, new types of taxi industry, including a taxi industry where taxi transports passengers and cargo at the same time, are still prohibited.[41]

However, according to the traditional theory of business patent, there is a problem that the principle that new technologies and industries should be allowed in principle cannot be realized. Also, there is a problem of going against the freedom of business protected by the Constitution. Whether business is an object of patent or license, it is the object of the constitutional freedom of business. Thus, the principle of competition should be recognized in patented business. Today, even patented business is rarely granted an exclusive right and the principle of competition tends to be gradually introduced to patented business. To enable competition in patented business, entry should be allowed in principle when certain requirements are met. There is such a tendency even in part of statutes or regulations. For example, the aviation industry has become a dual airline industry

38 Socar (Tada) Taxi, Platform Taxi: Kakao Mobility, Tago Solutions, VCNC, etc.

39 The term "passenger transport platform business" means any business that provides a transport platform, an application used in mobile communication devices, internet homepages, etc., to meet the needs of other relevant persons to passenger transport (Yeogaekjadongcha woonsoosaeob beob [Passenger Transport Service Act], Act No. 17091, Mar. 24, 2020, arts. 2, 7 (S. Kor.)).

40 Passenger Transport Service Act, art. 34 (2).1 (S. Kor.).

41 The Passenger Transport Service Act stipulates that freight transport other than passenger transport can be provided additionally, but passenger transport is basic and freight transport is additional.

for Korean Air and Asiana Airlines from Korean Air's monopoly industry, and is now changing into a multiple aviation industry. Wireless communication industry is under the competitive system of KT, SKT and LG U+.[42]

In view of these changes in the circumstances surrounding patented business, it is necessary to reconsider the theory of business patent, especially the protection of exclusive business rights of patented operators. If patented business is regarded as being in the freedom of business and just being of great public interest, then a legal principle can be established that new innovative type 'patented business' should be permitted in principle if it meets the requirements for public interest and safety.[43] Of course, if new taxi business is permitted, it is necessary to regulate the total amount of existing and new taxi businesses to protect consumers, and also to adjust understanding and ensure fair competition between new and existing taxi businesses. In addition to this, as part of transitional measures, the issue of how much to protect existing taxi operators who have been protected for an exclusive business right should be resolved. Through financial investments in the existing taxi industry,[44] acquisition of the existing taxi business by new taxi operators, etc., the proper supply as a whole should be controlled with the existing taxi business reduced.

IV. Conclusion

The principles of desirable regulatory legislation for new technologies and industries are as follows: If the legislation can be carried out promptly, it is reasonable and desirable to permit new technologies and industries after advance

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42 The Constitutional Court observed that turning the exclusive operation status of the marine passenger transport general licensee, a patented operator, into a full-scale competition by removing the criteria for accommodation demand from the licensing criteria through the amendment to the Marine Transportation Act on January 6, 2015 resulted in dropping the property value of the maritime passenger transport business license acquired through a patent, thereby reducing the liability property and restricting the claimant's property rights, but since such a shift from exclusive management status to competition is to ensure the maritime transportation rights of island residents and to prevent monopolies in the regular visiting passenger transport business market pursuant to Article 119 paragraph 2 of the Constitution, the purpose of the legislation is justified (Constitutional Court [Const. Ct.], 2015Hun-Ma552, Feb. 22, 2018 (S. Kor)).

43 If entry of new industry contributes more to the public interest such as the interest of consumers, it is not reasonable to restrict the entry on the ground of excessive competition.

44 For example, introduction of a taxi reduction system involving financial support for company taxi operators and a taxi reduction system through the preferential purchase system of the State and local governments for private taxis.

regulatory legislation. If prompt legislation for advance regulation is hard, advance permission is reasonable on the premise of temporary regulation that guarantees minimum safety, etc. If new technology or new industry is quite likely to cause an irreversible serious risk, permission should be given after safety is proven. When the risk of new technology or new industry is not great, new technology or new industry should be permitted in principle on condition of ensuring minimum safety. A flexible and comprehensive method of legislation should be expanded to embrace new technologies and industries.

Given the characteristics of new technologies and industries and the limitations of the legislative capacity of lawmakers, it is required that statutes should prescribe principles or fundamental matters only and the legislative powers should be comprehensively delegated to the executive powers or broad administrative discretion should be recognized. The non-blanket-delegation doctrine needs to be reconsidered. Legislation that permits regulatory sandbox can satisfy both the demand that new technologies and industries should be allowed promptly and the demand that public interest such as safety should be guaranteed at a minimum. And it is a legislative alternative suitable for the regulatory system and the regulatory realities in Korea. A regulatory equity system should be established to exclude the application of unreasonable statutes and regulations to new technologies and industries to guarantee regulatory equity. To accommodate new technologies and industries, outdated and unreasonable legal theories should be adjusted in line with social changes by reconsidering the existing unreasonable legal theories, including the traditional theories of risk regulation and business patent.

In order to ensure that regulatory legislation can effectively achieve its intended purpose, the implementation (success) conditions of the relevant regulatory legislation should be presented at the time of regulatory legislation and plans to meet the conditions for implementation should be prepared together. It is also important to enhance the professionalism and sense of duty of regulators.

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