

Research on Intellectual Property Rights and Benefit Distribution of Military and Civilian Dual-Use Technology

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Abstract. Development of dual-use technologies has become an important topic in the course of integration and innovative development of military and civil-use technologies. At present, there are some problems in attribution and sharing of intellectual property rights of dual-use technologies, such as blur of rights and duties. To find out existing problems and their factors and to establish a new intellectual property rights attribution, utilization and sharing mechanism of dual-use technologies which can effectively coordinate interests and benefits of all sides as soon as possible will contribute to increasing total number of intellectual properties of dual-use technologies and improving military and civilian integration and collaborative innovation of China.

Keywords: Dual-use technologies, Intellectual property, Attribution of rights, Interests distribution.

1. Introduction

With acceleration of global industrial transition of national defense and development of cutting-edge civilian technologies, some major military powers, e.g. the United States and the European countries, introduce a series of special plans on dual-use technologies in succession to promote achievement transformation of dual-use technologies. The United States developed plenty of innovative projects and made plenty of achievements in dual-use technologies by implementing the Technology Reinvestment Program and DUS&T. For instance, Defense Advanced Research Projects Agency (DARPA), paid a special attention to tackling difficulties in each link, e.g. fundamental research, application research, verification test and industrialization and applying achievements in dual-use technologies directly to military demands or civilian markets. In 2012, the European Union released a policy report named Action Plan for the Establishment of Innovative and Competitive Security Industry, raising the requirement of developing products and technologies for the purposes of both national defense and security.

Now some domestic experts and scholars have carried out pertinent studies on achievements of dual-use technologies and their transformation and started initial exploration in both theory and practice. In terms of definition of concepts concerning dual-use technologies, Guo Tao et al [1] defined dual-use technologies as those high and new technologies which can be used for both military and civilian purposes, or those technologies to be developed which are good for military purpose and at the same time have great commercial value and industrialized development potential. Wang Yaling [2] pointed out, to develop dual-use technologies and realize general utilization of technologies is the most important task in integrated military and civilian development of national defense, technologies and industry. Yin Yanqing et al [3] pointed out that, it is necessary to make an overall plan to realize transformation of dual-use high technologies and replace low-end industries via high-tech industry zones to achieve the goal of transformation and industrialization of high technologies. In terms of studies on attribution of rights, Li Yubi et al [4] pointed out, in the framework of collaborative innovation, problems concerning intellectual property right attribution and benefit distribution include the problems concerning intellectual property right attribution and benefit distribution between intellectual property owners and between intellectual property owners and public benefits beneficiaries. Liu Licheng et al [5] held that, for a collaborative innovation group, as to attribution of patent rights between colleges and between colleges and cooperative enterprises, it is better to apply for the patent right jointly. Li Wei et al [6] suggested that articles of association of the collaborative innovation group should be formulated to define attribution of intellectual property in the course of

collaborative innovation. Xie Huijia [7] held that members of a collaborative innovation group normally have different opinions on intellectual property due to their difference in nature of organization, value proposition and interest demand. Hu Yishan [8] believed that it is necessary to establish a multi-subject attribution system as to national defense intellectual property based on the capital input of different natures. In terms of studies on benefit distribution, Yu Jun [9] pointed out, in the course of transformation of technologies from colleges, it should be guided by the principle of the intellectual property strategy, cater for the market needs, improve rewarding mechanism and create new transformation systems.

2. Problems Existing in Attribution of Intellectual Property Rights and Interests Distribution of Dual-use Technologies in China

2.1 Problems in Distinction of Property Right Subject

Currently, China generally attributes achievements of dual-use technologies to the state or the organization. It's hard to manifest the economic value of intellectual work (including research of researchers and organization of organizations) and arouse the enthusiasm of researchers and organizations. It does not comply with the interest distribution principles of market economy and eventually hinders from transformation of national technology policies and dual-use technology patents into actual productivity.

Nonperformance of duties of intellectual property subject of dual-use technologies is mainly reflected in poor protection of dual-use technologies. As a matter of fact, achievements of many dual-use technologies were transferred privately. Even after approval of patent application of dual-use technologies, there are still private property right trades, which lead to loss of patented property rights and endanger national defense, security and benefits.

2.2 Problems in Attribution of Intellectual Property Rights

Attribution of intellectual property rights of dual-use technologies is not clearly defined by laws. In practice, as the accomplishing organization of achievements of dual-use technologies, research institutes unconditionally deliver the research achievements to manufacturers at the military request after accomplishing research tasks specified in the contract. Some research institutes lose intellectual property rights and interests when signing contracts. Partial delivery of technologies and concealing technologies happen occasionally. As intellectual property of dual-use technologies is not clearly defined by laws, the accomplishing organizations do not enjoy exclusive rights of the technological achievements.

2.3 Distribution Imbalance of Intellectual Property Interests

Most of the intellectual property of dual-use technologies is attributed to the state, which caused external effect, and this may eventually lead to a negative result in the field of national defense science and technology. Military industrial enterprises enjoy use right of achievements for free on the one hand and receive consistent revenues on the other. However, research institutes enjoy no revenue any more after performance of research obligations and free transfer of intellectual property. The revenue transfer between the right enjoying party and the obligation performing party seems to a neutral result from the perspective of overall benefits. Nevertheless, if there is any external effect leading to reduction of research efforts of the research institute, the state must mitigate negative external effect and there is a high cost, the final revenue will be eventually negative.

3. Building of Intellectual Property Rights Attribution and Interests Distribution Mechanism of Dual-use Technologies

3.1 Establishing a Multi-subject Structure of Intellectual Property of Dual-use Technologies

The first thing is to define subject of public rights of the state and subject of intellectual property. There are two points worth notice. Firstly, both are roles of the country, but they more than parallel to each other. Subject of public rights of the state has the right of jurisdiction over the subject of intellectual property. Secondly, the subject of intellectual property is not only a subordinate to the subject of public interests of the state. The subject of intellectual property is an independent legal subject. It is supposed to ensure completeness of rights through strict definition of rights.

The second thing is to define status of intellectual property subjects by input of factors. Production of dual-use technologies is involved with capital input of the country, equipment's, plants, operation management and information inputs of research colleges and institutes as well as time, effort and intellectual investment of individual researchers. If military industrial enterprises also put in production factors, they will also be rated as intellectual property subject by proportion of inputs of production factors as with other organizations and individuals that put in production factors.

3.2 To Optimize Attribution Rules of Intellectual Property of Dual-use Technologies

As for patented intellectual property in national defense funded by the state, if the state is the owner of the patented intellectual property, the research and production organizations should also enjoy exclusive use right, beneficial right and licensing right and individual researchers should also enjoy beneficial right. If the research and production organizations are the owner of the intellectual property, they should enjoy exclusive (other than the state) use right, possession rights, residual control right and residual beneficial right and individual researchers should also enjoy beneficial right. As for patented intellectual property in national defense not funded by the state, individual researchers should enjoy exclusive use right, transfer right, transaction right and beneficial right and all any other rights. Unless otherwise expressly agreed in advance, intellectual property of achievements made in cooperative development should be attributed to all cooperation parties. All the cooperation parties should have right to implement achievements made in cooperative development and shared jointly, but the implementing party should distribute revenues of appropriate proportion to other cooperation parties. Without unanimous consent of other cooperation parties, any party shall not transfer the shared achievements made in cooperative development.

Patent applicants have the rights to state themselves as the patent applicants on relevant documents of technological achievements and receive certificates of honor and rewards. Other intellectual property rights of service invention patents shall be owned by the organization of the intellectual property applicants. The intellectual property applicants shall not transfer or disclose service invention patents to others in private.

3.3 To Improve Benefit Distribution Rules Concerning Intellectual Property of Dual-use Technologies

Firstly, it is necessary to establish a reasonable sharing mechanism with respect to revenues of intellectual property of dual-use technologies. If the intellectual property is owned by the state, the state should compensate the invention organization and individuals. Enterprises may reward service inventors some shares on the condition that patents are owned by the enterprises. Enterprises or research institutes may establish a new enterprise together with other enterprises or research institutes by means of buying in shares with intellectual property. Individuals may also buy in shares with intellectual property they own during shareholding revolution of enterprises or research institutes.

Secondly, it is necessary to improve intellectual property rewarding system for technological innovation in the field of national defense. Intellectual property applicants or registrants should be rewarded based on the process of acquiring intellectual property. Besides, appraisal of technical titles for innovation subjects, promotion and appraisal of awards should match with the intellectual

property acquired in quantity and quality. Quantity and quality of intellectual property, e.g. patents, should match with that of these.

3.4 To Improve Intellectual Property Regulation Agency of Dual-use Technologies

We should enhance and improve intellectual property regulation system with respect to dual-use technologies and establish an authoritative and efficient intellectual property regulation agency and an intellectual property protection and management agency with respect to dual-use technologies. Their main functions shall be to research and formulate overall strategy, policies and countermeasures related to intellectual property of dual-use technologies; to coordinate relationship between various divisions and communicate information; to study major multi-division and multi-industry issues; and to supervise and inspect implementation of policies and countermeasures.

4. Summary

Distribution of intellectual property rights of dual-use technologies is manifested in transformation and application of them. We must define intellectual property rights attribution policies and mechanisms with respect to dual-use technologies in order to realize reasonable and incentive distribution of interests. Therefore, as to intellectual property of dual-use technologies generated under different conditions, we must define eligible rights subject and formulate a reasonable interest sharing mechanism to effectively stimulate technological breakthrough by innovation subjects, improve independent innovation capability of China fundamentally and give great support to the integration and innovative development of military and civilian technologies.

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