"R&D Market" in Intellectual Property Antitrust Cases and Its Application

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At present, China's anti-monopoly practice is similar to the EU competition law, mainly considering innovation and R&D as factors in the evaluation of competition. This may be because law enforcement has recognized that the applicable R&D market dimension has inherent flaws in analysing the impact of market behaviors such as technology licensing and mergers on innovation activities, so a more scientific and flexible analysis method has been chosen, thus avoiding the problems encountered by the US FTC in the definition of R&D market practice.

At present, China's anti-monopoly law enforcement guidelines in the field of intellectual property rights are still in the process of drafting discussions. When setting up the review mechanism for monopolistic behavior in innovative R&D, the legislative department should fully absorb the useful experience of Europe and the United States R&D competition law enforcement, taking into account intellectual property rights. The particularity of monopoly theory and practice finds an institutional plan that is in line with the characteristics of market competition, is easy for law enforcement departments to operate and apply, and is generally understood by operators to effectively regulate the increasingly frequent abuse of intellectual property rights.

R&D market and intellectual property antitrust

In antitrust cases, the definition of relevant markets is often used as a sophisticated technical tool to analyze potential anticompetitive effects, determine the illegality of the act in question, or assist in the calculation of fines for illegal monopolistic conduct. Although it is an indirect analytical tool, the relevant market has greatly improved the scientific and accurate implementation of the anti-monopoly law with its principles and methods of operability.

With the increasing proportion of intellectual property rights in the market competition, the competition methods and dimensions between operators are constantly being updated. More and more anti-monopoly cases need to introduce special analysis dimensions such as technology market, especially in the innovation and research of technology. Although there is no trading behavior that is common in traditional market competition in the R&D process, in order to speed up the research and development progress and obtain R&D results, operators often adopt some behaviors that are beneficial to their own R&D activities, forming competition in R&D, such as obtaining Licensing the key technologies required for R&D or merging with competitors with a preresearch basis. Even if these behaviors that are conducive to their own R&D activities are suspected of excluding restrictions on R&D competition, they are limited by the fact that R&D results are not yet available. It is difficult for anti-monopoly agencies to apply the relevant commodity markets and related technology market dimensions to judge the illegality of the monopolistic behaviors involved in the case.

The US Department of Justice (DOJ) and the Federal Trade Commission (FTC) use the “Research and Development Markets” dimension to assess “the extent to which a license arrangement adversely affects the development or improvement of a product or process” because Licensing arrangements or
mergers may have a competitive impact on R&D, which is difficult to accurately identify through traditional commodity markets or technology markets." This shows that the US anti-monopoly law regulates the monopoly of patent licenses, and is not limited to the licensing of existing products or technologies. Even if the operators involved in R&D are still in the stage of technology research and development, their improper restrictions on competition may still be subject to antimonopoly law. Regulation. This is also consistent with the US “Horizontal Merger Guide” to “reduce innovation competition” as a competitive concern, thus making the R&D market an important complement to accurately capture potential anti-competitive effects. It is worth noting that although the US DOJ and FTC did not follow the “Innovation Markets” in the 1995 edition of the revised “Intellectual Property Licensing Antitrust Guidelines” in 2017, they instead used the “R&D market”. "The concept, but there is no substantive difference between the two.

R&D market definition

The R&D market consists of R&D assets (projects) for specific products or processes and their close substitutes. When the license agreement adversely affects the competition for the development of new products or improved products and procedures, and it cannot be measured by analyzing the commodity market or the technology market, it will further analyze its impact on the R&D market. It is basically the same as the assumed monopolist test method. For example, in a merger case, first, it is necessary to identify overlapping R&D activities among the operators involved in the merger. As with the use of the hypothetical monopolist test to analyze the relevant commodity market scope, it is necessary to clarify the goods involved. When applying this method, it is first necessary to clarify which R&D activities the operator is participating in when submitting the merger application.

Secondly, it should be identified that the R&D activities of the participating merger operators overlap each other (the “overlap” here refers to whether the goods or technologies to be developed by these R&D activities will have a competitive relationship in the future commodity market or whether they will affect the quality or price of goods in the future commodity market, and on this basis, finds alternative R&D activities for overlapping R&D activities. The purpose of this step is to identify alternative activities that can reasonably replace the participating developers engaged in research and development activities. This is equivalent to the assessment of supply substitution in the 1992 Merger Guide. In the definition of the R&D market, it is only necessary to find an operator who is engaged in alternative R&D activities or has the specialized equipment or technology required to carry out the R&D activities. In other words, it examines possible supply substitutions and potential competitors in the R&D market. If the R&D activity has a certain scale of alternative R&D activities at this time, the operator's weakening of R&D investment will not only increase the risk of failure in R&D competition, but also induce other alternative R&D participants to increase their R&D activities. The investment in R&D resources has led to the loss of R&D advantages of established monopolists and the difficulty in successfully developing new products or technologies.

At the same time, actual and potential competitors in the downstream market should be assessed. Investing in innovative R&D can expand the market share of operators in the downstream market and bring more profits. If the competition in the downstream market is fierce, then weakening R&D investment will result in loss of profits or even loss of competition opportunities for operators. If the
R&D investment is weakened enough to offset the losses of the operators in the downstream market, then the market scope of the R&D market can be determined.

In addition, when evaluating the R&D market, it is also necessary to take into account the special technical resources required for innovation, the proportion of innovation funds, the proportion of related products, and the economic benefits generated by the merger of two or more operators in their research departments. For example, assess the incentives for R&D concentration and R&D investment. After determining the scope of the R&D market, it should further analyze whether the R&D market share of the participating operators is sufficient to affect the overall R&D level in the market, and consider whether it is affected by the competition in the downstream commodity market and other factors that may affect the competition. Special factors. The market share of the R&D market in which the merger operator is located should take into account the R&D expenditures invested by the operator in developing new products or technologies, as well as other factors that may make the operator successful in research and development.

Applicable path to the R&D market

The R&D market concept was first applied to law enforcement practice in the 1990 Roche merger. In this case, Roche Pharmaceuticals and Genentech have coincided in research and development activities in three areas: vitamin C, human growth hormone, and CD-4-based AIDS treatment. The FTC accused the merger of the two may reduce competition in R&D, production and sales activities in these three areas, and finally reach a settlement by divesting the two companies' vitamin C and human growth hormone businesses, respectively. Subsequently, the FTC also began to investigate cases affecting innovation competition. Among them, the survey of the merger of Jianzan and Novozan in 2001 by FTC is the most representative. In this case, Genzan is a large biotechnology company and is a leader in the treatment of Pompe disease. The Novozan company involved in the merger is small and lacks commercial-scale production facilities and continuous funds to undertake clinical treatment or production, but Novartis has an ongoing research project to treat Pompe disease. Since there was no specific drug for the treatment of Pompe disease before the merger, the Federal Council believes that the merger will reduce the number of companies undergoing Pompe disease treatment research from two to one. Since Genzyme has submitted an orphan drug application to the Food and Drug Administration before the merger with Novozan, once the orphan drug is identified, unless the new product proves to be superior to the former, the drug will be obtained after successful listing. Special authorization for the seven-year exclusive use. FTC believes that Genzyme has fewer R&D incentives to drive the progress of Novozan's original research projects. On the one hand, once the products of Novozan can be damaged, the company's orphan drug exclusive rights may be damaged. On the other hand, the products of Novartis may also erode the product share of Jianzan. Therefore, the problem facing the FTC is whether the merger may substantially damage the competition for the development of Pompeii drugs and thus terminate the merger.

After a long investigation cycle, the FTC finally stopped investigating the case in 2004 with a 3:1 result. The voting results reflect a fundamental disagreement between the FTC on the appropriate analytical framework to evaluate the merger and its potential for innovative effects. At the time, FTC Chairman Timothy J. Muris wrote the main opinions of the opposing parties. Based on the FTC's early investigation report, he concluded that “the merger will change the number of independent innovations, but neither economic theory nor practical evidence can prove that the merger will affect innovation. It is necessary
to check whether the operators after the merger will reduce R&D. Incentives, and whether there is a capacity to promote the success of innovative R&D after the merger."

However, as the results of the investigation show, the R&D market is not the place where intellectual property is actually traded, but only the innovative activities invested by the operators. Therefore, the R&D market does not have the subject and object of the specific transaction, nor does it have specific trading behavior. Activities in the R&D market are precompetitive actions taken to gain future competitive advantage. Therefore, Laurence B. Landman (1988) described the R&D market as “although it is to protect the competition of future products, but it is not a stable and appropriate relevant market analysis dimension”. For the impact of market behavior on innovation, it is necessary to use the innovation activities undertaken by the operators as the basis for judgment. The innovation activities referred to here only include the operator’s investment in innovation and do not include the results of innovation. Therefore, for the innovation of related products, it is possible to finally develop a completely unrelated product or technology. The uncertainty in this result creates great uncertainty in the analysis method with innovation input as a reference. In addition, because the uncertainty of innovation activities is too strong, the characteristics of innovation results are difficult to identify, which in turn makes it difficult to define the R&D market. In view of this, the difficulty in defining the R&D market comes from the difficulty of quantifying the innovation process. It is also difficult to define clearly the market scope of an innovative knowledge and the potential competitive conditions in that market (Clovia Hamilton, 2002). As a high-risk investment behavior, innovative R&D always faces a repeated game process, especially when existing operators in the market are under competitive pressure from actual or potential competitors. The essence of the anti-monopoly policy is still the exertion of market forces. This type of performance may mean raising prices above the level of competition or reducing the quality of the products and the level of service provided to customers. Market forces can also influence the pace of research and development of innovative R&D activities and the types of R&D results. However, there should be a stable causal link between the implementation of the anti-monopoly law and the competitive effects of monopolistic behavior. Neither theory nor practice suggests that substantial market forces generally favor technological advancement (Phillip Areeda & Donald Turner, 1995). In view of this, there are large differences in market conditions for technology research and development or new product introduction.

The relationship between market concentration and innovation efficiency needs to be analyzed according to the specific case. In fact, the real concern of antitrust law is the overall impact of patent licensing or merger on innovation. This overall impact makes it easier to obtain accurate conclusions through analysis and evaluation of market conditions in specific cases. The R&D market covers the R&D competition of products or technologies, and the expected results of R&D determine the boundaries of relevant markets. However, the scope of the R&D market is largely determined by the characteristics of future products or technologies. This uncertainty is most closely related to the stage of R&D activities at the time of the survey, but it is also contrary to the broad and stable application characteristics of the relevant commodity markets and related technology markets. In other words, the R&D market formed based on R&D competition can satisfy the theoretical self-consistency under the basic rules of relevant market definition, but the lack of accurate understanding of the characteristics of innovation results in practice makes it difficult for R&D market concepts to undertake innovative analysis, jobs. In view of this, the application of the research and development market has always been a difficult problem in the study of the US anti-monopoly academic community.
To accurately and properly assess the negative impact that a patent license or merger may have on the R&D competition process, it is necessary to start with a specific analysis of the market conditions and facts. Unlike the US approach, the concept of R&D market (or innovative market) is not adopted in EU legislation, but in the “Guidelines on the application of technology transfer agreements in Article 101 of the EU Operating Treaty”: “Some license agreements may Influencing competition in innovation. However, when analysing such impacts, the committee usually only assesses the impact of the agreement on competition in existing product markets and technology markets. Delays agreements that will eventually replace existing products with new products or new products, may have an impact on competition in the innovation market. In this case, innovation is a potential source of competition that must be considered when assessing the impact of the agreement on the product market and the technology market. But in limited circumstances, the analysis of the agreement on innovation The impact of competition may be meaningful and necessary. This type of analysis is especially needed when the agreement affects innovation for the purpose of creating new products and can identify individual effective R&D forces early on. Next, we can analyze whether there are enough competitive R&D forces left after the agreement is signed. In order to maintain effective competition in innovation.” In the 2017 conditional approval of the Dow-DuPont merger, the European Commission reiterated that “innovation itself should not be understood as a market, but rather as an upstream technology market and a downstream formula market. Involvement in activities. However, this does not prevent the Commission from assessing the impact of the level of innovation of both parties and their competitors on the transaction.” Accordingly, the EU competition law is more inclined to consider innovation and R&D as factors in the competition assessment. In this case, the European Commission first analyzed the characteristics of the crop protection market and concluded that “competition may be an important factor driving innovation. The merger between important competitors may lead to a reduction in innovation”, ie “by reducing industry competition and increasing The competition between existing and future sales and the merger between competitive innovators may lead to a reduction in incentives for innovation.” Secondly, due to different assets, capabilities and differentiated incentives, only BASF, Bayer, Syngenta and the participating companies such as Dow and DuPont are engaged in the research and development and sales of crop protection. The precipitation and market entry thresholds are very high. Moreover, the merger is a close and important innovation competitor in many areas of innovation. Both parties have or are developing competing products. In the field of innovative R&D competition in these fields, there are very few competitors with the same capabilities. Finally, the European Commission compared the differences between the two sides in the crop protection research and development budget, staffing plan, and the number of active ingredients before and after the merger by studying the combined documents. The European Commission believes that the merger may significantly reduce the innovation space within the crop protection market and undermine the innovation competition in the entire industry. At the same time, the European Commission also believes that other R&D personnel on the market and companies with similar R&D capabilities are unlikely to increase innovation incentives, thus effectively offsetting the innovation competition impairment brought about by merger transactions.

Enlightenment to China

At present, China's anti-monopoly practice is similar to the EU competition law, mainly considering innovation and R&D as factors in the evaluation of competition. This may be because law enforcement has recognized that the applicable R&D market dimension has inherent flaws in analysing the impact of
market behaviors such as technology licensing and mergers on innovation activities, so a more scientific and flexible analysis method has been chosen, thus avoiding the problems encountered by the US FTC in the definition of R&D market practice.

For example, in the 2017 addition of restrictive conditions to approve the Dow-DuPont merger, the Ministry of Commerce believes that Dow and DuPont are important innovation forces in the relevant market, each competing in the R&D field, with large R&D investment and innovation. With strong capabilities and abundant product reserves, the merger will eliminate the basis for competition between the two parties. After the merger, both parties may reduce the incentives for technology research and development, reduce the current investment in parallel innovation fields, and delay the speed of new product launches, which may adversely affect the technological progress of the commodity market. In addition, by analyzing the characteristics of market competition, the Ministry of Commerce also noted that the core of the competition is capital, technology and research and development capabilities. However, the innovation success rate of the market is declining, the research and development costs are increasing, the patent protection period is shortened, and the difficulty of listing new products is increasing and the cycle is prolonged. Moreover, subject to the above factors, the market share of the market in recent years is relatively stable, and it is difficult for a new entrant with considerable strength to enter the market in the short term, and sufficient competitive pressure is formed for the merged entity. Therefore, the Ministry of Commerce requires the merger parties to perform certain stripping operations within a time limit to reduce the adverse impact of the merger on competition.

It can be seen that the innovation and research and development as a consideration factor is of great practical significance for accurately identifying the damage of monopolistic behavior to market competition from a dynamic perspective. It can compensate for the shortcomings of evaluating the negative effects of specific technology monopolistic behavior from static dimensions. An external perfection defined by the market further enhances the scientific nature of anti-monopoly law enforcement activities.

REFERENCES

