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Competition Restrictions on Technology Transfer Agreements in the Light of European Union Rules

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Abstract: Technology transfer agreements are one of the essential tools in industrial, economic and technological development in different countries. These agreements provide access to advanced and innovative technologies and improve product quality, increase productivity and promote competition in markets. However, one of the main challenges in technology transfer agreements is competition restrictions, which can have negative effects on competition, innovation and access to technology in different markets. These restrictions, especially in agreements that include exclusive conditions and market sharing, can lead to reduced competition, increased prices and limited access to new technologies. This article examines the effects of competition restrictions in technology transfer agreements and their consequences on competition in different markets. Competitive restrictions can include price fixing, market sharing, and entry barriers for competitors, all of which reduce competition and raise prices for consumers. This is not only detrimental to consumers, but can also reduce innovation and distort competition in domestic and global markets. This article also examines some of the exceptions and exemptions that can be considered for technology transfer agreements under certain circumstances. Finally, this study emphasizes the importance of observing competition requirements in technology transfer agreements. Close and effective monitoring of these agreements and the use of block exemption provisions can prevent unnecessary barriers to competition while protecting the interests of the parties to the agreement. Overall, this article emphasizes the need to strike a balance between the commercial interests of the parties and maintaining competition in the market so that technology transfer becomes a tool for promoting innovation, reducing costs, and increasing competition in global markets.

Keywords: Competition restrictions, contract, technology transfer, EU rules

INTRODUCTION

Technology transfer agreements are one of the important pillars in developing innovation and facilitating technology exchange between countries and companies. These types of agreements are particularly important in the European Union, which seeks to promote competition and innovation in different markets. Technology transfer can play an effective role in improving production, increasing productivity, and creating new business opportunities. However, at the same time, these agreements can face challenges such as competition restrictions that may hinder the development of competition and innovation in markets.

As an advanced economic institution, the European Union has developed specific rules and regulations to monitor these types of agreements in order to prevent anti-competitive behavior. These rules, which are mainly under the EU competition rules, carefully examine whether technology transfer agreements reduce competition in the market or prevent new players from entering the market. Among the most important EU laws in this regard are Articles 101 and

102 of the Treaty on the Functioning of the European Union, which set out specific restrictions on anti-competitive agreements and abuse of a dominant market position.

The aim of this article is to examine the restrictions of competition in technology transfer agreements, with an emphasis on EU law. This article first analyzes the basic concepts of technology transfer agreements and restrictions of competition, and then examines EU rules and practical challenges in implementing these rules in different industries. Finally, the results of the analysis of these rules in improving competition and innovation will be examined, and suggestions will be made to improve the process of monitoring and regulating the rules.

1- Concepts and theoretical framework

At the beginning of the research, and in order to explain the subject as much as possible, we will examine the relevant concepts.

1-1- Definition of technology transfer agreements

Technology transfer agreements refer to legal agreements in which one party transfers its technology, technical knowledge, or intellectual property rights to another party. This type of contract is mainly concluded in fields such as industry, scientific research, production and trade between countries or companies and aims to facilitate the transfer of technical knowledge and technology in order to increase productivity, innovation and competition (Jafarzadeh, 2011: 59). Technology transfer can include various types of technical assets such as inventions, software, production methods, industrial processes or business models. In this type of contract, one of the most important aspects is the transfer of intellectual property rights. In this process, the owner of the technology transfers the rights related to his inventions, patents, trademarks and other intellectual property rights to the other party. This transfer can be complete or partial, so that conditions such as duration, geographical area and the way of using the technology are carefully determined (Shahidpour, 2013: 110). In some cases, technology-owning companies allow their counterparty to use the technology in the production of specific goods or services, but at the same time, restrictions are placed on use, such as in a specific geographic area or for a specific period of time.

Legally, technology transfer contracts are usually complex and detailed agreements that include payment terms, obligations of the parties, restrictions and rights to use the technology. In many of these contracts, the parties may specifically refer to such things as the transfer of technical knowledge through training courses, or even the physical transfer of technical assets such as devices, software and documentation. Also, in some cases, technology transfer is carried out in a documented and technical form, such as software packages, instructions and specific guidelines for implementing the technology in production or commercial processes. At the international level, technology transfer contracts are of particular importance, especially for developing countries, which can achieve advanced technological achievements and improve their industrial and economic capabilities. In particular, these countries can increase their production capacities and pave the way for their economic growth through technology transfer contracts. Large and advanced companies usually resort to such contracts in order to expand their markets in developing countries (Shahidpour, 2013: 116)

In addition to contributing to economic growth, these contracts can allow technology-receiving countries to apply new technical knowledge and innovations in their industries through technology transfer. For this reason, technology transfer contracts can play a vital role in the economic and industrial transformation of different countries.

1-2-Concepts of competition and anti-competition

Competition is one of the key principles in free markets in which companies or firms independently try to increase their market share, attract more customers, and ultimately improve their products and services. Competition generally improves the quality of goods and services, reduces prices, and increases innovation. In other words, competition is one of the effective factors in economic growth, improving productivity, and facilitating access to new technologies (Habiba and Mirshamsi, 2009: 54). In the framework of free competition, there are no unfair restrictions on competitors entering the market or trade barriers.

Fair competition means that competition should take place in conditions where all market players have equal opportunities. In this case, none of the competitors can improve their position in the market through unfair methods, such as collusion or fraud. On the other hand, unfair competition refers to a set of behaviors that reduce competition and create unfair conditions for other competitors (Habiba and Mirshamsi, 2009: 60). This type of competition can take the form of collusion, non-competitive pricing, and abuse of a dominant position in the market.

Price collusion is one of the most common anti-competitive behaviors. In this type of collusion, companies illegally agree to keep prices artificially high or fixed at a certain level to prevent competition from decreasing. Such actions not only reduce consumer welfare, but can also lead to inflation and increased public spending. Price collusion is carried out through coordination between companies in setting prices, sales conditions, and discounts, especially in key industries such as pharmaceuticals and automobiles. Market sharing is another type of anticompetitive behavior. In this case, companies illegally agree to divide the market among themselves, each of which is allocated to a specific segment of the market or a specific geography. Such agreements reduce competition in the market and consumers have fewer options to choose from. This allows prices to increase and the quality of goods and services to decrease (Nuriyushanlui and Raja, 2009: 89). Market partitioning is usually observed in industries where there are a limited number of large players, each of whom seeks to maintain its share of the market.

Abuse of a dominant market position is another example of anti-competitive behavior. When a company uses its dominant position in the market to prevent competition or impose unfair conditions, this can end up to the detriment of consumers and competitors. This behavior usually occurs when a company has a large market share and uses its power to exert pressure on competitors or consumers (Mousavi, 1400: 25). In such situations, the dominant company may use various tools, such as unfair pricing or creating barriers to entry, to prevent competition.

According to EU regulations, any anti-competitive agreement or behavior that reduces competition in the EU internal market is illegal. In particular, Article 101 of the Treaty on the Functioning of the European Union prohibits anti-competitive agreements and states that any agreement that restricts competition in the market must be repealed. Article 102 also refers to the abuse of a dominant position in the market and will be prosecuted if a company uses its dominant position to impose anti-competitive conditions.

Finally, close monitoring of competitive and anti-competitive behaviour in different markets by regulatory authorities is essential. Such monitoring helps to maintain healthy competition in the markets and to prevent the creation of unfair conditions that are detrimental to consumers and other competitors.

1.3- The role of the European Union in regulating competition rules

As one of the world's largest economic blocs, the European Union has set precise rules and regulations to maintain healthy competition in its internal markets, which aim to prevent anti-competitive behavior and abuse of dominant market positions. The role of the European Union in regulating competition rules, in addition to ensuring fair conditions for all market players, is to promote innovation, improve the quality of goods and services, and reduce prices for consumers. These regulations are designed in particular to prevent monopolies and collusion in the markets so that real and effective competition between companies can be established and economic conditions are beneficial to consumers and the European economy in the long term.

The competition rules of the European Union are mainly based on two main principles: Articles 101 and 102 of the Treaty on the Functioning of the European Union. Article 101 specifically emphasizes the prohibition of anti-competitive agreements between companies that can restrict competition in the market, while Article 102 refers to the abuse of a dominant market position by companies. These two articles are considered the main pillars of the EU's competition policies and play a key role in maintaining a competitive and fair structure in internal markets. On the other hand, the EU also prevents unnecessary barriers to competition by closely monitoring business practices and concluding technology transfer agreements and tries to provide a fair environment for all businesses. ((European Commission, 2014: 70

2-Legal framework for competition restrictions in technology transfer agreements

Technology transfer agreements are one of the essential tools in the spread of technology and promotion of competition in various markets. However, if these agreements are not properly regulated or if their provisions illegally lead to a reduction in competition or create barriers to competitors, they can cause serious problems for the market and the economy of countries. For this reason, many countries, especially the European Union, have designed specific legal frameworks to regulate competitive behavior and prevent anti-competitive behavior in technology transfer agreements. Within this framework, competition restrictions in these agreements must be carefully examined and monitored to prevent unfair conditions for competitors and consumers.

The European Union has specifically developed competition rules to regulate technology transfer agreements, which are specifically stated in Articles 101 and 102 of the Treaty on the Functioning of the European Union. Article 101 of this treaty prohibits agreements and practices that restrict competition. prohibits, including price fixing, market sharing, and restrictions on the production or supply of goods and services. In technology transfer agreements, if the parties agree to unlawfully use their technology only within a certain scope or to sell it only in a certain geographical area, this can be considered a restriction of competition prohibited under Article 101 (Habiba and Mirshamsi, 2009: 65). Also, if one of the parties to the agreement has a dominant position in the market and abuses it, it can be subject to the supervision of the supervisory authorities.

Article 102 of the Treaty on the Functioning of the European Union warns companies that have a dominant position in the market not to use this position to create obstacles to competition. This article specifically emphasizes the abuse of a dominant position in the market, in particular when a company uses this position to restrict competition or impose unfair conditions on competitors or consumers. In this regard, technology transfer agreements that include Restrictions on the use of technology in a specific geographical area or on the restriction of competition in specific markets can be found to be incompatible with EU competition rules under Article 102.

Although EU rules generally prohibit restrictions on competition in technology transfer agreements, exceptions are also made for specific situations. The Block Exemption Regulation, also known as the "Technology Transfer Exemption Regulation", allows companies to impose certain restrictions on competition in technology transfer agreements under certain conditions and subject to certain criteria. In particular, if the technology transfer leads to improved competition, reduced costs or promoted innovation, these restrictions may be exempted

In this regard, one of the common cases that may be exempted is restrictions on the use of technology. For example, in situations where technology transfer leads to technical and scientific advances in a particular industry or contributes to innovation and development on a large scale, such restrictions may be legally approved. Also, restrictions that lead to fair market sharing or prevent abuse of a dominant position in the market may also be subject to competition exemptions.

In Iran, monitoring of technology transfer agreements and maintaining healthy competition in the market is carried out through institutions such as the Consumer and Producers Protection Organization and competition law regulatory organizations. These organizations try to prevent monopolies and anti-competitive practices in technology transfer agreements by using domestic and international regulations. Like the European Union, Iran's domestic laws also impose special supervision on these contracts, emphasizing fair competition and non-abuse of dominant position (Shahidpour, 2013: 116)

2-1-Article 101 of the Treaty on the Functioning of the European Union

Article 101 of the Treaty on the Functioning of the European Union (TFEU) is one of the main pillars of the European Union's competition law, which regulates and monitors anti-competitive agreements and behaviors between companies and aims to ensure free and fair competition in the internal markets of the Union. This article specifically emphasizes agreements that may restrict or eliminate competition. Such agreements or coordination, which take the form of collusion, market sharing, or price fixing, are clearly prohibited in this article.

Article 101 of the Treaty on the Functioning of the European Union specifically states that "all agreements, decisions and concerted practices which restrict or distort competition within the internal market of the European Union shall be prohibited." This article covers, in addition to direct agreements between companies, all measures which, in the form of informal coordination, lead to the creation of barriers to competition and monopolization in the market. In fact, Article 101 seeks to prevent the emergence of anti-competitive behavior, such as collusion to fix prices, share markets, or prevent competitors from entering the market.

The enforcement of Article 101 of the Treaty on the Functioning of the European Union and the monitoring of anti-competitive agreements are among the main tasks of the European Competition Commission. The Commission is responsible for examining and identifying anti-competitive agreements in different markets and, if necessary, carrying out investigations and imposing heavy fines. In addition, EU member states are also obliged to adapt their competition laws in accordance with the principles of Article 101 adapt and actively monitor competition in internal markets (European Commission, 2014: 89) In addition to monitoring commercial agreements and technology transfers, the Competition Commission has been able to identify and pursue many anti-competitive agreements using tools such as advanced investigations.

Article 101 of the Treaty on the Functioning of the European Union is an important legal instrument for maintaining competition in the internal markets of the European Union. By prohibiting anti-competitive agreements and practices, this article seeks to prevent monopolies and reduce competition, and ultimately create healthy markets with reasonable prices for consumers. However, given the complexity and diversity of different markets, careful monitoring and proper enforcement of these rules are essential to achieve competition objectives.

2-2-Article 102 of the Treaty on the Functioning of the European Union

Article 102 of the Treaty on the Functioning of the European Union (TFEU) is another fundamental pillar of the competition policies of the European Union, which specifically prohibits the abuse of a dominant market position by companies and aims to maintain healthy competition and prevent monopolies in the internal markets of the Union. This The article clearly states that "any abuse of a dominant position in the internal market or in part thereof as to prevent or jeopardize competition shall be prohibited." The main purpose of this article is to prevent pressure or unfair practices by companies that, due to their dominant position in the market, are able to impose unfair conditions on competitors or consumers. (Heidari and Ashna, 2019: 35)

A dominant position in the market refers to a situation where a company has a significantly large share of the market, so that it is able to control market conditions without worrying about competition from others. This dominant position can result from various factors such as the size of the company, market share, access to limited resources or advanced technology. In other words, a dominant position means that a company can influence the economic decisions of the market without causing serious problems for competitors or consumers.

However, having a dominant position is not prohibited in itself. What is stated in Article 102 of the Treaty on European Union is prohibited, is abuse of this position. Abuse refers to actions taken by a dominant company to exploit its position and reduce competition in the market. These actions may include unfair pricing, limiting production or distribution, or imposing unfair conditions on customers and competitors.

The European Union Competition Commission is responsible for monitoring the application of the rules of Article 102 of the Treaty on European Union and can impose fines and sanctions if it detects abuse of a dominant position. The Commission regularly checks whether dominant companies are infringing competition rules by carrying out detailed investigations and assessments. If the Commission concludes that a company has abused its dominant position, it can impose heavy fines on that company and In some cases, it may even issue corrective orders to stop anti-competitive behavior. (Habiba and Mirshamsi, 2009: 119)

In this context, the most important tool of the Competition Commission is in-depth investigations and reviews that can lead to the identification of abuses. The Commission can also make decisions such as stopping anti-competitive actions, imposing fines, or changing the structure of contracts to maintain competition in the market.

One of the main challenges in implementing Article 102 is to accurately identify abuses of dominant position. This requires a thorough and comprehensive assessment of market conditions and company behavior. Especially in innovative and fast-changing industries, where the boundaries between healthy competition and abuse are changing rapidly, monitoring competition and abuse of dominant position can be difficult. On the other hand, strict enforcement of these rules can create opportunities for increased competition, innovation and productivity and incentivize companies to behave more transparently and fairly in the market. (Habiba and Mirshamsi, 2009: 124)

However, the European Union Competition Commission has tried to identify and stop anti-competitive behavior in various markets by closely following up and imposing heavy fines. These oversights have made the European Union a pioneer in creating and maintaining competition in its domestic markets and preventing monopolies.

2.3-Exceptions and exemptions

In addition to the restrictions of competition clearly set out in Articles 101 and 102 of the Treaty on the Functioning of the European Union (TFEU), some exceptions and exemptions are also envisaged which may be permitted under certain conditions and if certain criteria, agreements and anti-competitive behaviour are met. These exceptions are specifically intended for cases that benefit competition and innovation in the market and are aimed at increasing efficiency, reducing costs and improving the quality of goods and services. Therefore, the exceptions and exemptions in EU competition law are designed to help encourage innovation and competition in the internal markets while preventing monopolies and anti-competitive behaviour.

2.3.1-Exemptions under Article 101 of the Treaty on the Functioning of the European Union

Article 101 of the Treaty on the Functioning of the European Union prohibits anti-competitive agreements between companies, but at the same time, it provides for the possibility of using certain exemptions for specific agreements. These exemptions are defined under the Block Exemption Regulations or the Technology Transfer Exemption Regulations specifically for specific agreements.

a) Block Exemptions

Block exemption regulations exempt specific agreements that do not generally restrict competition. These exemptions are mainly designed for agreements concerning technology transfer, distribution of goods, and research and innovation cooperation agreements. For example, if a technology transfer agreement improves the quality of products, promotes innovation or reduces production costs, this agreement may be exempted from the restrictions of Article 101 of the Treaty on the Functioning of the European Union. (Gupta, 2024: 84)

In some of these exemptions, the main condition is that the agreements in question do not restrict competition in the EU internal markets and instead promote competition and innovation. These exemptions are particularly important in the pharmaceutical and information technology industries, as technology transfer and joint ventures can create new innovations in the markets, leading to lower costs and higher productivity.

b) Exceptions to reduce costs and promote innovation

If agreements between companies are such that they reduce costs, promote innovation and improve the quality of services or goods, the EU specifically exempts these agreements from the prohibition of Article 101. In this regard, agreements that are usually considered anti-competitive can be exempted if they ultimately benefit consumers and promote competition in the market.

2.3.2- Exceptions to Article 102 of the Treaty on the Functioning of the European Union

Article 102 of the Treaty on the Functioning of the European Union warns companies that have a dominant position on the market not to abuse this position. However, in some cases, abuse of a dominant position may be permitted under certain conditions, in particular when such actions are in the interest of competition and innovation in the market.

a) Non-anti-competitive conduct for competition and innovation

In some cases, dominant companies can use their power to engage in conduct that indirectly benefits competition and innovation in the market. For example, if a dominant company increases competition and diversity in the market by offering new products or services, this conduct may be considered by the European Competition Commission as an exception. In other words, if a company's dominant position creates better conditions for consumers and competitors, that conduct may fall under the exceptions of Article 102. (Gupta, 2024: 84)

b) Lowering prices for the benefit of consumers

Another exception to Article 102 is when a company exploits its dominant position to reduce prices in order to drive competitors out of the market. If these price reductions benefit consumers and ultimately lead to increased competition and lower prices in the market, this type of behaviour may also fall under the exceptions of Article 102. In such a case, the European Union Competition Commission may decide that these price reductions are permissible under the competition rules.

Despite the exceptions and exemptions provided for in Articles 101 and 102 of the Treaty on European Union, the use of these exemptions and exceptions itself presents certain challenges. One of the biggest challenges is the accurate identification and assessment of these agreements. In particular, where companies use block exemptions or exceptions to reduce costs and promote competition, it can be difficult to determine whether these agreements will ultimately create more competitive conditions in the market. Also, the proper implementation and strict monitoring of these exceptions by the European Union Competition Commission requires careful and continuous research.

3- Competition requirements in technology transfer agreements

Technology transfer agreements are recognized as one of the important tools in the exchange of technical knowledge and innovation between countries and companies. These types of agreements play a key role in accelerating research and development processes and expanding innovation markets, especially in advanced industries such as pharmaceuticals, information technology and energy. However, if these agreements are not properly regulated, they can restrict competition, create monopolies or reduce diversity in the market. Therefore, since technology transfer can potentially harm competition in the market, it is necessary to strictly comply with competition requirements in the regulation of these agreements to ensure that technology transfer will promote competition, innovation and productivity in the market.

Since competition regulations in the European Union and many other countries, including Iran, strongly emphasize the observance of competition principles in commercial contracts, it must be ensured that no agreements or conduct that restricts competition in the market are included in these contracts. Competition requirements in technology transfer contracts include issues such as preventing price collusion, market sharing, and creating barriers to entry. It must also be noted that there are no restrictions on competition and innovation in the use of technology, especially in situations where the parties to the contract must be able to freely use the transferred technology without affecting competition in the market.

3.1- Agreements and Contingencies in Technology Transfer Contracts

In technology transfer contracts, agreements and contingent liabilities are key sections that specify the terms and conditions of use of the transferred technology. These contracts usually include detailed agreements on the manner, timing, and scope of use of the technology, payment terms, and intellectual property rights. The purpose of these agreements is to regulate the commercial and technological relations between the parties in a way that both benefits the interests of the parties and maintains competition in the market. These agreements are usually drawn up on the basis of competition principles in order to avoid unnecessary restrictions of competition and, at the same time, to allow the parties to benefit from the financial and technical benefits resulting from the transfer of technology.

a) Agreements in technology transfer agreements

One of the most important parts of technology transfer agreements is the initial agreement on the terms of use of the technology. These agreements can include details on the duration of the transfer, the geographical scope, and the type of use of the technology. For example, a technology transfer agreement may specify that the receiving party is only allowed to use the technology in a specific market or geographical area and cannot apply it in other markets or areas. These agreements can also set restrictions on the possibility of transferring the technology to others, producing similar products, or using the technology in specific industries. (Rezazadeh, 2019: 93)

In many technology transfer contracts, payment terms can be set on a conditional basis. Typically, the technology owner company may want to set payments gradually and based on certain achievements in the use of the technology. This type of agreement is especially common in contracts that involve research and development or long-term innovations. For example, a contract may make payments dependent on the achievement of specific technical or commercial goals. This type of agreement can prevent legal problems if technical or commercial conditions are not met. (Rezazadeh, 2019: 96)

B) Contingencies and competitive restrictions in contracts

One of the most important aspects of technology transfer contracts is the creation of contingencies and restrictions that can, in some cases, affect competition in the market. Since the competition laws of the European Union and many countries, including Iran, strongly emphasize the prevention of competition restrictions in contracts, it is necessary to regulate the conditions and agreements in such a way that competition in different markets is not weakened. Especially in contracts that include advanced and innovative technologies, restrictions that cause monopoly in the market or prevent competitors from entering the market should be avoided.

For example, some technology transfer agreements may include restrictions on exclusive distribution, whereby only one company is allowed to distribute the product or use the technology in a particular market. In such circumstances, such agreements can reduce competition and raise prices for consumers. For this reason, in many cases, EU competition rules and national laws monitor and prevent such restrictions. To avoid such problems, technology transfer agreements should be structured in a way that benefits all parties to the agreement, including consumers and competitors. Another common conditionality in technology transfer agreements is the stipulation of innovation and research conditions during the term of the agreement. In particular, in many agreements, the recipient of the technology is allowed to use the transferred technology for further research or development, provided that these innovations benefit the parties to the agreement and competitive markets. These types of conditions can help create competitive conditions and prevent monopolization of information or technology. (Emami Meybodi, 2014: 42)

c) Exceptions to conditions in technology transfer agreements

While competition laws prohibit many conditions and restrictions on competition, there are also exceptions that can be acceptable in some cases. For example, if contractual agreements or conditions lead to greater innovation, reduced costs, or improved product quality, these restrictions may be approved by competition authorities. These types of agreements can create long-term benefits for the market, including greater competition and improved productivity.

For example, some technology transfer agreements that are specifically designed to research and develop new technologies or improve production processes may be exempt from some restrictions, especially if it can be shown that these agreements ultimately benefit consumers and competition in the market.

3-2-Restrictions arising from technology transfer in different fields and markets

Technology transfer is recognized as a vital process for industrial, economic, and technological progress worldwide. However, this process can be accompanied by restrictions that are particularly evident in different fields and markets. These restrictions may be created due to specific economic, social, legal, or even technical conditions and can have negative effects on competition, innovation, and access to advanced technologies in the markets. Therefore, it is essential that these restrictions are identified and their negative effects are prevented by formulating appropriate regulations.

3-2-1- Geographical and regional restrictions in technology transfer

One of the most common restrictions arising from technology transfer is geographical restrictions. Many technology transfer contracts may include conditions that allow the use of technology only in a specific geographical area. These types of restrictions can limit access to technology in other regions or countries and, as a result, prevent free competition in global markets. Especially in developing countries, these types of restrictions can delay the entry of advanced technologies and innovations into domestic markets, thereby reducing competition and increasing costs for consumers. (Emami Meybodi, 2014: 60)

These restrictions can in some cases be imposed due to legal and economic differences between different countries. For example, in the pharmaceutical industry, large companies usually allow technologies related to the production of specific drugs to be used only in specific countries or specific markets. These types of restrictions can create inequality in access to technology and technical knowledge in different markets and end up at the expense of lower-income or developing countries.

3-2-2- Restrictions related to intellectual property and intellectual property rights

Intellectual property rights (IPR) are another factor that can create significant restrictions in the technology transfer process. Technology owners usually want to protect their intellectual property rights and not allow transferred technologies to be easily transferred to competitors. In many cases, technology transfer agreements specifically include strict conditions that allow the use of the technology only in limited formats or under certain conditions. These types of restrictions can be especially effective in innovative industries with more complex technologies, such as pharmaceuticals, electronics, and information technology.

In this context, many countries and companies enter into exclusive agreements in which the rights to use, produce, and distribute the technology are not fully transferred to the recipient. These types of agreements can limit access to innovations and advanced technologies in some markets, reducing competition and preventing new companies from entering the market. In addition, companies may exploit patents, copyrights or trademarks to restrict the use of technology in other sectors or countries, which can be a barrier to healthy competition and innovation.

3-2-3- Trade and economic restrictions on technology transfer

Trade restrictions are another obstacle that may arise in the technology transfer process, especially in certain markets. One of these restrictions can be specifically related to the payment terms in technology transfer contracts. In some cases, technology transfer companies may set payment terms in such a way that only large or financially strong companies are able to pay the high costs of technology transfer. This situation can lead to limited access to technology among small and medium-sized companies and also in less developed markets (Zahedi, 2007: 55)

In addition, economic restrictions can also have a negative impact on the technology transfer process. These restrictions can limit access to new technologies, especially in developing countries that may not have the financial resources or infrastructure necessary to exploit advanced technologies. This may result in only industrialized and developed countries benefiting from new technologies, leaving other countries unable to compete in global markets.

3-2-4- Technical constraints on technology transfer

Technical constraints on technology transfer are another factor that can complicate the transfer process. Especially in complex industries such as aerospace, nanotechnology, and biotechnology, technology transfer can face many technical challenges. These constraints can manifest themselves in the form of technical problems in adapting new technologies to existing systems, difficulties in using and maintaining advanced equipment, or the need for specific expertise in implementing new technologies. In these circumstances, companies must ensure that sufficient technical and human capacities are available to use the new technology. Otherwise, these types of constraints can prevent the effective exploitation of transferred technologies. (Rezazadeh, 2019: 96)

4- Analysis of the impact of competitive restrictions in technology transfer agreements

Technology transfer agreements can serve as an important tool for transferring technical knowledge, promoting innovation, and developing industries in different countries. However, competitive restrictions in these agreements can have significant negative effects on market competition, consumers, and even innovation in different industries. Although these restrictions may be seen by some as tools to protect the commercial interests of the parties to the agreement, they can indirectly prevent free competition and reduce the level of innovation. These effects of competitive restrictions are clearly visible in various aspects such as reducing competition in the market, creating monopolies, increasing prices, and reducing the variety of products and services.

The first major effect of competitive restrictions in technology transfer agreements is reducing competition in the market. Many of these agreements include specific conditions and agreements whereby a company is allowed to use the technology only in a specific geographical area or in a specific market. These types of restrictions may prevent competitors from entering the market and thus lead to monopolies in different market segments. For example, if a technology-owning company allows only one specific manufacturer to use its technology in a specific region, competitors are deprived of access to this technology and its benefits. In such circumstances, competition is limited and companies may not be able to easily enter the market, which is not in the interest of consumers and reduces the level of competition and innovation in that market. This issue can have more serious negative effects, especially in emerging and developing markets where competition has not yet fully developed. (Heidari and Ashna, 2019: 124)

Another negative effect of competitive restrictions in technology transfer agreements is increased prices. When technology transfer agreements are limited to specific markets or for exclusive use, a company may be able to charge higher prices than it would if there were more competition. Particularly in industries such as pharmaceuticals and information technology, where advanced and proprietary technologies are considered valuable goods, these restrictions can lead to higher prices and reduced competitiveness in the market. This can be detrimental to consumers, as they have to pay higher prices to access products or services and do not benefit from competition and fair pricing.

Competitive restrictions can also reduce the variety of products and services in the market. In markets where technology transfer is severely restricted, only a limited number of companies may use these technologies, reducing the variety of products and services. This can lead to a loss of diversity in the supply of products and services, especially when a company has a monopoly on a particular technology and competitors are excluded from it. This type of monopoly can lead to a decrease in innovation in the relevant industry and an increase in prices, because without competition, there is no incentive to improve the quality of products or services.

Another negative impact of competitive restrictions in technology transfer agreements is the creation of barriers to entry for competitors. In many cases, companies specifically consider conditions for the use of technology that do not allow competitors to enter the market. For example, a company that owns the technology may set restrictions for the recipient of the contract, whereby the use of the technology is only allowed if competition with other companies is prevented. These conditions, especially in markets where there is insufficient competition, can prevent new players from entering the market and, as a result, reduce market opportunities for small and medium-sized companies. In these conditions, competitors cannot exploit new technologies and may be forced to exit existing markets or compete with large companies at higher costs. (Shahidpour, 2013: 80)

These restrictions can also lead to reduced investment in research and development and innovation. When technology transfer agreements include severe restrictions on the use and development of technologies, companies may have less incentive to invest in research and development. In particular, when companies are forced to comply with restrictions on the use of transferred technologies, they may not be able to use these technologies to develop new innovations. These restrictions can slow down the research and innovation processes and ultimately lead to a slowdown in the pace of progress in the industry.

Competitive restrictions in technology transfer agreements are not only not in the interests of consumers and competitors, but may also be detrimental to the macroeconomic performance of a country or region in the long run. These restrictions can slow down the process of globalization and the expansion of access to innovative technologies, and create economic and social challenges for developing and emerging countries. For this reason, it is essential that competition requirements are strictly observed in the regulation of these agreements and unnecessary restrictions that harm competition and innovation are eliminated. Therefore, striking a balance between the commercial interests of the contracting parties and maintaining competition in domestic and global markets is the key to success in the optimal use of technology transfer contracts.

CONCLUSION

Technology transfer agreements are a vital tool in facilitating innovation, development, and industrial progress processes globally. These types of agreements provide access to advanced technologies and technical knowledge for different countries and can improve the quality of goods, increase productivity, and enhance the competitiveness of countries and industries. However, one of the main challenges in these agreements is the competitive restrictions that may be included in them and have serious negative effects on competition, innovation, and productivity in different markets. If these restrictions are not managed properly, they can lead to monopolization, increased prices, reduced product and service diversity, and even reduced innovation in different industries.

Competitive restrictions in technology transfer agreements can specifically include such things as geographical restrictions on the use of technology, market sharing, and price collusion. These restrictions can prevent competitors from entering the market and create monopolistic conditions that will not benefit consumers. Especially in sensitive industries such as pharmaceuticals and information technology, such restrictions can make it difficult for developing countries or smaller companies to access new innovations. As a result, these restrictions not only reduce competition, but also increase costs for consumers and reduce the incentives for companies to innovate in the market.

On the other hand, another dimension of these restrictions is their negative impact on the diversity of products and services. When technology transfer is limited to a specific group of companies or in specific regions, the market is less diverse and innovative. This situation can lead to the creation of monopolistic markets in which only a limited number of companies benefit from technology transfer, while competitors are excluded. As a result, in such situations, competition in the market is severely reduced and the diversity of products and services for consumers is limited.

Competition restrictions can also reduce competition in the market and, consequently, increase prices. When companies that own technology grant exclusive access to it to one or more specific partners, these companies may be able to unfairly increase prices. In this situation, consumers will have to pay higher prices for similar goods and services. This can have a negative impact on consumer welfare, especially in countries with less access to advanced technologies. Despite these challenges, various methods can be used to deal with these restrictions. One of the most important tools to address these problems is the close and effective supervision of technology transfer agreements by regulatory authorities such as the European Union Competition Commission. These institutions must be careful that technology transfer agreements do not lead to monopolization in the market and reduce competition. It is also necessary to strictly observe competition requirements in the regulation of these agreements to prevent the emergence of unnecessary barriers to competition. In this regard, the use of block exemption provisions specifically designed for technology transfer agreements can be helpful, as they allow certain agreements that contribute to promoting competition and innovation to be exempted from competition restrictions.

On the other hand, it should be noted that in some circumstances, competition restrictions can create certain benefits. For example, in cases where technology transfer leads to lower costs, promotes innovation and improves the quality of products, some restrictions can be beneficial to consumers and industry. Such agreements may ultimately lead to improved competitive conditions in domestic and international markets.

In summary, it can be said that the success of technology transfer agreements depends to a large extent on striking a balance between the commercial interests of the parties to the agreement and maintaining competition in the market. To achieve this balance, it is necessary that competition policies are applied precisely and effectively and that technology transfer agreements are structured in a way that both protects the interests of the parties and protects competition in domestic and global markets. Therefore, by closely monitoring and effectively enforcing competition regulations, the negative effects of competitive restrictions can be prevented and help create a favorable environment for the growth of innovation and competition in global markets.

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