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Perspectives of International Technology Transfer in the TRIPS-plus era: Problems and Solutions

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Abstract

The purpose of this study is to investigate impact of TRIPS-plus provisions concerning the protection of intellectual property rights on further development of international technology transfer to developing countries. The study is methodologically based on recognition of dual influence of IPRs on international technology transfer that is under discussion after adoption of the TRIPS Agreement. The author shows that there is evidence of posing of IPRs as a factor of restriction with regard to transfer and dissemination of technology. This study find that problems of negative impact of strengthening of the protection of intellectual property rights have increased due to real or possible implementation of so-called TRIPs-plus provisions included to myriad of contemporary Free Trade Agreements. Author reviews comprehensively the essence of the TRIPS-plus era reflected in a new changes in international technology transfer. Analysis is accomplished by exploration of provisions of more significant FTAs. The study concluded that active use of flexible mechanisms of the TRIPS by developing countries could restrain negative effects of a TRIPS-plus provisions. Simultaneously, author of study offers valuable insight for updating the global policy in area of the IPRs protection and of technology transfer in the TRIPS-plus era, making some suggestions on harmonization of interests of developed and developing countries.

Keywords: International technology transfer; intellectual property rights; TRIPS-plus; world development; developing countries.

Introduction

In conditions of dynamic development of global processes in the sphere of R&D and in the world economy there is increasing the significance of international technology transfer (ITT) by which exchange and diffusion of technologies, innovation and knowledge is occurring. The attention that contemporary world community pays to ITT is caused by that technologies are a deciding factor for economic and social development, as well as for solution of different problems at the regional and global levels.

One of the most actively discussed issues of international economic relations and international relations in the area of aid to development in past fifty years is ITT to developing countries. Developing countries hold in this issue very active position and since 1970s have expressed on various international forums their intention to improve the access to foreign technologies and to enhance their technological capabilities.

ITT being a critical factor to sustainable rate of economic growth and development is very sensitive to implications of protection of intellectual property rights (IPRs). With increasing of transnational trade flows, especially flows of sophisticated production and exclusive rights to it, the linkage between patents and technology transfer has been getting an overarching recognition not only on the national but also on the international level. For example, that can be seen from Article 7 and 8 of the Agreement on trade-related aspects of IPRs (TRIPS Agreement) and Article 16 of the Convention Biological Diversity.

At present, the main problem of technology transfer is its effective development on new stage of IPRs protection named TRIPS-plus era.

Methodology

The methodology of present study is based on approach to ITT as having a complex nature. This means that ITT is a composite package that contains the investments, financing capital goods, technology skills, information transfer, international scientific cooperation and other items. Achievement of success in technology transfer also proposes the human resources, financial supporting, educational institutions, R&D institutions, as well as balanced regime of protection of IPRs. ITT is provided by the different international arrangements at the universal and regional levels. There is array of instruments of soft and hard international law that include appropriate legal provisions and take into account complex character of technology transfer [1]. New regional agreements in economic area that have marked a TRIPS-plus era reaffirm these conclusions.

The fact of the matter is that technology transfer in most cases is transaction. The one of conditions of technology transaction is consent of parties to protect the IPRs. Anyway, developing countries is agreeing to protect IPRs in technology transfer. The international technology transfer also, without doubt, includes commercialization of technologies in cross-boundary context.

Other methodology starting point is the recognition of dual role of IPRs in area of ITT. As pointed in one of WIPO documents, "relationship between patents and technology transfer is generally understood to have both positive aspects, namely where useful technology is indeed transferred to the recipient, and a negative component, namely where patent rights or an abuse of such rights, may equally hinder a transfer of technology" [2]. It goes without saying that enforcement and use of IPRs should promote technology as global goods to be a basis for overall prosperity. Achievement of this aim is undecided in a TRIPS-plus era.

Author considers that IPRs should be the necessary condition of transfer and diffusion of technologies but no factor of their restriction. It is important to understand that technologies are global goods, and the implicit aim of international system of IPRs protection is to facilitate technology transfer. This paradigm articulated in conventional instruments concluding provisions on technology transfer covers international instruments in sphere of IPRs protection. In the past five decades, provisions on technology transfer have been incorporated into various international instruments, belonging to various branches of international law.

The objectives of appropriate international instruments should identify not only goals of real processes of international technology transfer, carried out through various channels, especially licensing, but also goals of protection of transferred technologies. The protection and enforcement of IPRs should contribute to promotion of technological innovation, transfer and dissemination of technology, including mutual advantage of producers and users of technological knowledge, social and economic welfare, as well as to balance between rights and obligations. In our opinion, the commercialization of technologies and their transferring makes realization such goals of technologies transfer as facility to capacity building and development very vulnerable.

The empirical findings, used in article, on different aftermaths of impact of IPRs on economic growth in developed, developing and least-developed countries (LDCs) is the basis for understanding the tendency of contradictory impact of strengthening IPRs protection on perspectives of international technology transfer, especially technology transfer to countries with lower middle income, in a TRIPS-plus era.

TRIPS AND INTERNATIONAL TECHNOLOGY TRANSFER: ACHIEVEMENTS AND PROBLEMS

Ambiguous impact of IPRs on technology transfer is one of issues of the global policy in area of ITT [3]. From this view, provisions of the TRIPS is very interesting subject matter. Despite of that adoption of the TRIPS in 1994 was inspired by pharmaceutical TNCs, it provides the scope and extent of IPRs disciplines that are unprecedented at the international level. At that, adoption the TRIPS has become a starting point of globalization of IPRs as a new level of development of international system of IPRs protection. International standards are basis for essential evolution of national systems in direction of their convergence around the world.

It is well-known that the TRIPS as first comprehensive agreement contains the set of minimum standards covering IPRs protection in main IPRs areas. These standards shall be

provided by each Members of the WTO. Moreover, the TRIPS requires the country Members to develop appropriate mechanisms to enforce the protection of IPRs.

Globalization of IPRs, connected with TRIPS as central part of global legal system in area of IP, has had implications for global economic growth and affected international technology transfer as one of the factors of economic growth. Some analytics have underscored the emerging of significant changes in ITT after adoption the TRIPS [4;5]. Indeed, the TRIPS encompasses the majority of countries, therefore its implications for global economy and international technology transfer are an undoubted.

It seems that adoption of the TRIPS lead to an increasing of the market, namely trade approach to international technology transfer and departure from coordinated paradigm of ITT taking into account interests of developing countries. Before the TRIPS, there was practice when IPRs created artificial barriers instead of promoting the innovation and made the dissemination of knowledge costly (so-called restrictive practice). Close connection between patents, trade and technology transfer was recognized in articles 7, 8 and 66.2 of the TRIPS. As the result, there occurred a changing in debate on technology transfer.

We consider, however, this shift does not mean negation of approach to technology transfer as tool for realization of human right to access to technologies in the context of human right to development. It has to be explained by that the trade and trade aspects of IPRs continue to have a profound human rights foundation. Moreover, the TRIPS strives to invoke the setting of such basic principles as the principle of balance between protection and enforcement of IPRs, on the one hand, and promotion of technology development as well as transfer and dissemination of technologies, on the other hand. Under preamble of the TRIPS there is stipulated the due coordination between goals of national systems of IPRs protection and goals of development and technology progress.

In accordance with Article 7 of the TRIPS, protection and enforcement of IPRs shall contribute to the promotion of technological innovation, transfer and dissemination of technology, mutual advantage of producers and users of technological knowledge, and shall contribute to balance between rights and obligations in a manner conducive to social and economic welfare.

Provisions of preamble and of Article 7 reflect a new paradigm of economic development postulating that the economic development should be estimated in terms of human development that, as Dutfield and Suthersanen have stated, supplements, in turn, economic development by incorporating of social welfare considerations and sustainable development [6]. Goals of welfare and development having achieved through technology transfer, diffusion and application of technologies particularly meaningful for developing countries have been embodied in the flexible mechanisms of the TRIPS, such as compulsory licensing, parallel import, transitional period and so on. With regard to ITT depending on patent system there may be also mentioned Article 29.1 addressing the disclosure requirement, Article 30 and 31 concerning exceptions and limitations to the exclusive rights, and Article 40 regarding control over anti-competitive practices in contractual licenses.

The TRIPS assigns the legal principles in accordance with which the sovereignty and independence of developing states to adopt decisions on exploiting the flexibilities, enumerated in Agreement, are respected. Flexibilities give to developing countries a latitude to acquire technologies without paying to rights-holders full reward for using of protected results of intellectual activity. Moreover, the TRIPS proposes measures consistent with provisions preventing the abuse of IPRs by the holders of rights or the resort to practices that unreasonably restrain trade or adversely affect international transfer of technology.

After adoption of the TRIPS, issue on impact of stronger IPRs on technology transfer, especially ITT to developing countries and LDCs, is largely in focus of attention of international organizations and experts [7; 8]. This question is similar to question on influence of stronger IPRs upon international trade [9]. As Correa has explained, it is arise from the continuing technology gap between North and South that is growing since the TRIPS has been adopted. He has expressed a fear about that enhanced protection given to IPRs will not effectively promote development process. On the contrary, it will limit instead encouraging the access to technology, that have been voiced by many developing countries [10].

Indeed, prior to the TRIPS is paid technology transfer. This reflects the commercial approach to technology transfer but with a bearing in mind the development implications. As Yueh remarks, this priority contradicts to adopted prediction on technology transfer as the one of factors of

convergence in the global economy and as addition to other factors that inhibit absorption and transfer of technologies [11]. Other expert G. Samad argues that increasing of the level of IPRs enforcement encourages licensing, reducing imitation, but enhances royalty and license fee. That has negative impacts not only on technology transfer to developing countries but also on FDI [12].

It should also not remain be unmentioned that prevailing trend in global IPRs policy is, indisputably, the strengthening of IPRs protection. The significant broadening of scope and duration of IPRs protection covered in the TRIPS lead to difficulties of ITT. To do general and unambiguous conclusion on impact of increasing IPRs protection on the ITT also is a hard because various groups of countries face different results of stronger IPRs concerning ITT. At present, the positive influence of stronger IPRs upon ITT is under discussion.

TRIPS-PLUS PROVISIONS AS APPLIED TO RELATIONS BETWEEN IPRS AND TECHNOLOGY TRANSFER

The compliance of developing countries with provisions of the TRIPS having increased IPRs protection has been conditional on their striving to get access to market of developed countries. Higher level of IPRs protection is a kind of price of such access. A key trend visible at the level of cross-regional integration and bilateral trade and investment agreements is a further increasing of IPRs protection. It will continue also in near future. There would may be expected that economic integration being achieved via bilateral and regional agreements will result in essential expanding of technologic exchange. However, there are a certain difficulties.

Due to the transfer of technology is actively being inserted in world trade, great role for regulation of ITT belongs to various bilateral and regional agreements, namely free trade agreements (FTAs) and economic cooperation/partnership agreements (EPAs). New trends in international policy in sphere of the IPRs protection and of the ITT is an incorporation of provisions on IPRs protection and technology transfer into agreements adopted at the bilateral and the regional levels (NAFTA, EU, ASEAN), and is expansion of IPRs protection beyond the level that has been set by the TRIPS.

Provisions laid down in myriad of bilateral and regional trade agreements stipulate the standards known as provisions "TRIPS-plus". They mean for the strengthening of IPRs protection. Thus, significant changes are occurring at the international, regional and bilateral levels based on strengthening of minimum TRIPS standards through progressive harmonization of policies in accordance with standards of technologically advanced countries. The world was to take the occurrence of so-called TRIPS-plus era affecting IP, trade, economic development and, accordingly, international technology transfer [13]. Enumeration of given agreements is large. There also should be mentioned bilateral investment treaties (BITs). They integrate the IPRs protection into international investment protection regime, as well as into regulating of ITT in kind of a part of investment flows. Specificity of BITs is a use of notion IPRs for definition of 'investment' and 'remedies of investment protection'.

In some cases, the bilateral and regional trade and economy agreements intend to cooperation in the sphere of technology exchanging and contain appropriate provisions on IPRs protection. In addition, some of given agreements may quite be regarded as an instruments in the sphere of technology transfer, insofar as they contain appropriate provisions. Given agreements, for example agreements USA with Peru, Chile, Mexico and Colombia, recognize the meaning of technology transfer for bilateral and regional international economic relations. These agreements also recognize importance of promoting the technology innovation, as well as the disseminating of technology information and the capacity building in sphere of technology development and collaborative scientific projects. Pursuant to these agreements, parties "shall give priority to collaboration that advance common goals in science, technology and innovation and support partnerships between public and private research institutions and industry". Any such collaborative activities or transfer of technology shall be based on mutually agreed terms (Article 16.12(2) of the U.S. – Peru Trade Promotion Agreement (PTPA) and Article 16.12(2) of the U.S. – Columbia Trade Promotion Agreement (PTPA)).

Similar provisions are included to trade agreements between the EU and developing countries. Additionally, the Article 132 ('Objectives') of EU-CARIFORUM EPA (2008) of the Chapter "Innovation and IP" provides the contributing to promotion of technological innovation and to the transfer and dissemination of technology and know-how. This Chapter provides for

“encourage, develop and facilitate cooperative research and development activities in science and technology”; “encourage, develop and facilitate cooperative production and development activities in the creative industries”. Further, Article 21.3 of the Cotonou Agreement concluded between members of African, Caribbean and Pacific group of States (ACP) and the EU reads: “Cooperation shall promote business development through the provision of finance, guarantee facilities and technical support aimed at encouraging and supporting the creation, establishment, expansion, diversification (...) of dynamic, viable and competitive enterprises in all economic sectors as well as financial intermediaries such as development finance and venture capital institutions, and leasing companies by: (d) encouraging inter-firm linkages, networks and cooperation including those involving the transfer of technology and know-how at national, regional; and ACP-EU levels, and partnerships with private foreign investors which are consistent with the objectives and guidelines of ACP-EC Development Cooperation» (Second Revisions of the Cotonou Agreement – Agreed Consolidated Text, 2010). Given agreements include detailed provisions on IPRs protection and outline high standards that are new for developing countries.

The testing of perspectives of impact of these agreements on technology transfer and their standards of IPRs protection is a lap of future. Nevertheless, it is logical continuation of having made studies on correlation between the level of IPRs protection and technology transfer in general. It is now clear that possible influence shall be ambiguous because the specificity of these agreements is that they contain provisions on IPRs that are going beyond multilaterally agreed agreements in sphere of IPRs protection and set standards TRIPS-plus aiming at reinforcement position of holders of IPRs. That may negatively influence on advancing such goals of technology transfer, as goals of promoting to development and capacity building. Therefore, conducted analysis of these provisions [14] is a part of estimating the perspectives of technology transfer.

Multilateral agreements containing the provisions on technology transfer and providing of technology protection with a view of IPRs protection is being signed by countries with different levels of development. TRIPS-plus standards, being pushed mainly by developed countries, seek to turn off the road of compromise that has been attained in the previous TRIPS Agreement. As signed by Sampath *et al.*, under these standards “the important flexibilities, including transitional adjustment periods, policy space in implementation and the underlying public policy objectives of national systems, including development and technological objective, are now largely foregone in different ways” [15].

These new standards make difficulties for ITT and complicate access of developing countries to technologies as condition of their development. These standards make a lot of trouble for using of so-called flexible mechanisms, especially compulsory licenses promoting the facilitation of transfer technology. That alludes the sovereign discretion of government of developing countries to maneuver on area of IP laws is unduly curbed by bilateralism in IP area. That is because developing countries lose the possibilities to use flexibilities of the TRIPS permissive to support their technology development. These circumstances have become as matter of debate in the context of further progressive and steady technology development of developing countries. Undoubtedly, strong standards of TRIPS-plus are likely to be inappropriate legal terms for obtaining of technology and achieving of development purposes through technology transfer just in poor countries and set back their technology development. It is clear that these agreements, in perspective, will rather impede than promote technology transfer to developing countries.

A main problem arisen from expansion of TRIPS-plus provisions is that the principle of balance assigned in the TRIPS and other agreements of the WTO is questioned. FTAs can include provisions in which the principle of balance is implemented, but it is at least exception. So, only out of 17 agreements of USA on free trade, balance principle is explicitly recognized in preamble of Ch. 17 “Intellectual Property Rights” of the U.S. – Chile Free Trade Agreement claiming “the need to achieve a balance between the right of right holders and the legitimate interest of users and the community with regard to protected works” [16]. This facts show that the principle of balance might be considered as fad of international IP law policymakers. At the same time, Article 46.6 of ACP – EC Partnership Agreement proclaims, inter alia, that cooperation shall extend to the prevention of the abuse of IPRs by right holders and the infringement of such rights by competitors.

Approach to the principle of balance as a fad undermines regime of flexibilities, postulated by the TRIPS. Developed countries regard the balance as superfluous detail in trade relations with

developing countries, although for themselves broadly exploit the implemented flexibilities, especially the compulsory licensing, for the providing of right of their citizens to access to medicines. We think that justification of necessity of the principle of balance is significant issue of current and future global policy in sphere of IP and ITT, as given principle promotes the technological advancement around the world. In turn, tensions between the TRIPS and the TRIP-plus mean an imbalance in the global system of IPRs protection.

Discussion

The FTAs are explored by experts and scholars in detail [17-21]. It is possible to state that there arise, along with international system of IPRs and their protection, the bilateral level with inherent to it standards of stronger IPRs protection. Drahos has named this appearance as a new bilateralism in the intellectual property [22]. This bilateralism is, in essence, a fragmentation of international IPRs regulatory regime that negatively influences the ITT.

Interestingly, adoption of the TRIPS-plus provisions has led to discussions regarding an interpretation of terms 'strong' and 'weak' IPRs protection. These terms are frequently referred to area of technology transfer. It is common among experts that strong and weak protection should not be reduced to worse and better protection. So, the strong protection in context of need of poor countries for technology can not be named as better. It could be named strict.

As set forth, if the impact of multilateral agreements on IPRs, including the TRIPS, is well tested, the analogical impact of FTAs is understood worse. However, here are some exclusions. This is the investigation of W.G. Park [23]. He appears to have analyzed the impact of such well-known FTA, as NAFTA, on creating of innovation in Contracting Party (USA, Canada and Mexico) and intra-NAFTA technology transfer.) Park has found that NAFTA strengthening the IPRs protection beyond the TRIPS has played, in general, an important role in increasing of cross-border technology trade among Contracting Parties relative to their trade with the rest of the world. However, Mexico remains technology recipient, and the strengthening of IPRs protection, in turn, did not lead to transformation of it to technology originator. There are evidences on that Canada is Contracting Party in which innovation and cross-border technology transfer have had utmost growth. I, author of given article, would like to assert that is an example when developed countries, first of all, profit from the TRIPS-plus, although positive shifts also occur in advanced developing countries.

There also should be mentioned impact of FTAs on access to medicines that is subject matter for vivid expert discussions [24; 25]. Moreover, some of trade agreements include provisions on pharmaceutical test data protection. That is going beyond the requirements that were set up by the TRIPS.

For creating balanced global regime of protection of IPRs that beneficially influences the achievement of goals of ITT is important to change the system and mechanisms of adoption of decisions within the global policy on IPRs for taking into account interests of all countries. In this regard, Gerhart stresses that we need for quest of "new institutional mechanisms for creating and adjusting global policy toward innovation and knowledge goods" [26].

TRIPS-PLUS AS A CHALLENGE TO TECHNOLOGY TRANSFER UNDER THE WTO REGIME

The age of TRIPS-plus, also named post-WTO regime, should be explicitly acknowledged as making trouble for mutually beneficial international technology transfer. That differs with reason of the WTO regime rooted in promise of mutual benefit from international trade and economic globalization. Therefore, aim of setting up the just international trade system firmly facilitating the technology inflows in interested countries is not achieved at present. Technologies are global public goods and, therefore, they should be transferred within same global formal and informal channels. International global trade system as one of the major formal channels of technology transfer should be global and intended to prosperity around the world. It means that the international trade system is, in essence, as system of multilateral cooperation. According to said, the FTAs must be compatible with the global level, but not lead to its fragmentation.

Additionally, the FTAs should not distort the global system of IPRs protection founded on the principle of balance. This thesis is relevant to feedback relations between the bilateral and multilateral levels of technology transfer intersecting with bilateral and multilateral trade and with

investment relations too. In this context, role of multilateral international instruments and international organizations, including the WTO, remains and increases. Therefore, the TRIPS-plus age, or the post-WTO regime, may be identify as some challenge to standards of technology transfer, including IPRs aspect, agreed on the global level. Among other things, Cohen, having envisaged the use of potential of the WTO and the TRIPS multilateral regime for international technology transfer, has remarked that the WTO continue to play supportive role in setting up the just and balanced international trade system closely related with international technologies transfer. As he further notes, “this will require strengthening the provisions in WTO agreements that seek to promote developing countries access to modern technology. In our view, an effective framework should initially adopt a global outlook with regard to technology demand and the consumer market in developing countries, local economic and technology capabilities as well as enhancing world trade” [27]. In my opinion, indeed, there appears to be very strong need for multilateral framework that shall secure stable and predicable conditions for long-term FDI and for support the constructive mechanisms of technology transfer to developing countries.

Results

Speaking generally, there may see a forthcoming of unprecedented situation of the TRIPS-plus era concerning international system of technology transfer closely connected not only with a new phase of international scientific and technologic cooperation but also with a new phase of development of world trade and investment. Issues of the paradigm of IPRs protection gain in importance. As I deem, in order to optimize process of technology transfer in the TRIPS-plus era the various groups of countries must undertake individual and collective actions. Insofar as developing countries are more interested in integration in technology flows, they must elaborate strategic vision of actions for upholding the international and the national regimes of IPRs protection that may correspond to their technological interests and development policy. That implies the struggle for implementation of international instruments providing the facilitation in technology transfer and capacity building.

Moreover, policy space of developing countries covers concerned realization of provisions of instruments in sphere of IPRs protection that intends to facilitation of technology transfer and technology development. These are first of all provisions of the TRIPs. It is important for developing countries to question the possibilities of the TRIPs for facilitation of technology transfer and to achieve implementation of them. It should be accompanied by setting up of forums in order to take stock of mentioned possibilities in context of general assessment how far substantive provisions of the TRIPs may contribute to attaining the goals claimed in preamble and Article 7.

There are lots international organizations to be conducted the policy in sphere of IP and technology transfer like the WIPO, WTO, UNFCCC, UNCTAD and UNIDO. Developing countries should in more coordinated manner to discuss at the level of international organizations the issues on impact of IPRs on technology transfer, striving to output of concerted position and action, as well as pursuing the implementation of international instruments. Developing countries should deliberately take decisions on participation in the FTAs or other international agreements containing any TRIPS-plus obligations. If they already are members of these agreements, there are needs for active renegotiations on their obligations. The forming of favorable global order of technology transfer demands an active attempts for implementation at the national level the TRIPS flexibilities that facilitate technology emulation, innovation and invention.

LDCs are more vulnerable to any strengthening of IPRs protection. Therefore, they are very interested in extension of their transition period in process of the TRIPS implementation. Article 66.1 clearly ascertains that the Council for TRIPS shall, upon duly motivated request by a least-developed country Members, accord extensions of this period. This provision is the premise of the requirement of LCDs to extent transitional period. The LCDs is very interested in comprehensive stocktaking of technology transfer obligations that have been accepted by developed countries. They should demand effective implementation these obligations under Article 66.2 of the TRIPS.

Developed countries has major responsibility for global technology development and use of technologies for development goals. The universal position of developed countries consist in that they believe that well-designed IPRs system is essential tool of economic development and technology transfer. They must conscious of negative effect for unbalanced strengthen of IPRs protection, arisen from TRIPs-plus provisions, in respect of development of technology exchange.

Conclusion

There is inherent international technology transfer shortages connected with unbalanced IPRs protection. It demands the agreed global policy that may provide support the ITT through balanced IPRs protection and increasing of effectiveness of international technology markets. The widening of TRIPS-plus provisions restraining the technology transfer and technology diffusion makes the necessity to elaborate a new design of IP policy and its implementation at the national and international levels. It is clear that interests of technology users demand further preserving and developing of compulsory regime of licenses. Therefore, the international society should encourage institutional framework that permits to make use of range of flexibilities of the TRIPS. Ideally, interests of world development realized through transfer, diffusion and usage of technologies should affect evolution of international system of IPRs protection in direction of its flexibility but not inflexibility. In this connection, evolution of IPRs protection in this direction can form and determine the positive perspectives of development of international technology transfer conducive for achieving of goals of development.

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