

# WTO Comment on IP Rights

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*Paper was produced as a result of a request by WTO Trade and Environment Committee for a background document.*

*(The following are excerpts from a longer paper on intellectual property transfer of environmentally sound technology prepared by the WTO Secretariat.)*

This paper is prepared in response to a request by the Committee on Trade and Environment for a background document on factors affecting transfer of environmentally sound technology. That request included addressing "the issue in a more analytical framework which would complement WTO/TRIPS" (WTCTE/944, Para 28).

Document WTCTE/W/9 covers a number of issues relating to the environment and the Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS Agreement"), including the links between intellectual property rights (IPRs) and environmentally sound technologies (EST). It mentioned that IPRs could have two types of links with EST, i.e. promotion or generation of technology, and access to and transfer of technology. Regarding the former, document WTCTE/W/9 states that "[i]n the elemental systems of IPR systems and of the TRIPS Agreement, particularly in the area of patents, it is possible incentives for the generation of new technology, by giving the inventor an exclusive right (subject to certain exceptions) over the use of his invention for a finite period of time ... the IPR system provides protection to the results of investment in the development of new or technologically-innovative technology, thus giving the incentive and the means to finance such research and development. A com-

bination of a well-functioning IPR system and appropriate prior signals in the market, which direct research and development effort to environmentally sound technologies, can play a major role in developing the technologies that will respond to environmental problems" (page 10).

This paper focuses mainly on the issue transfer of technology. However, an important point to bear in mind is that the existence of any technology is a prerequisite to a possibility of access to that technology, i.e. if certain technologies have not been generated then their transfer is by definition not possible. Thus, the role of IPRs in providing an incentive for their generation should not be forgotten in discussions about their transfer.

Section I of this paper summarizes the main factors that affect the transfer of EST. Since the request for this paper was made in the context of free trade of the Committee's work program, Section II of the paper focuses on the effects of IPRs, in particular patents, on the transfer of EST. Section II first clarifies the scope of the issue, and then summarizes the different aspects of patents in the context of transfer of technology. Based on this discussion, it provides a simplified analytical framework to consider the link between IPRs and transfer of EST. Finally, Section II summarizes the empirical evidence on the importance of IPRs for technology transfer. Section III provides the conclusions.

The main points mentioned in this paper can be summarized as follows. There are a number of different ways in which technology transfer takes place, and IPRs are only one of the factors, and usually not the most important or dominant factor, which affect the trans-

fer of technology. For those seeking technology, information about the technologies, access to finance and technological capability have been mentioned much more often than IPRs as the crucial factors determining acquisition of technologies.

For those supplying the technology, an IPR regime in the host country improves the willingness of technology suppliers to provide the technology, but the importance of IPRs varies across different activities and industries. In certain cases such as joint ventures or technology licensing, IPRs in the home market might also increase the willingness of those obtaining the technology to acquire it. Thus, IPRs contribute positively to technology transfer in these situations both from the perspective of the technology supplier and those obtaining it. However, in cases where technology can be easily copied, its protection by IPRs will mean that the authorization of the IPR owner has to be obtained to use it when in the absence of such protection it could be used without such authorization.

If a voluntary transfer of such technologies is not forthcoming on reasonable terms within a reasonable period, they could be acquired under compulsory licensing, subject to the provisions of Article 20 of the TRIPS Agreement.

An important point to bear in mind is that if technologies cannot be easily copied there are a large number of such technologies, the cooperation of the technology supplier becomes essential for transferring technologies. In such cases, even compulsory licensing will not result in technology transfer unless

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the cooperation of the technology supplier is obtained.

## IPRs AND TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY

As mentioned above, IPRs are among the factors affecting transfer of technology. IPRs cover copyright and related rights, trademarks, geographical indications, industrial designs, patents, inventors' rights, layout-designs related rights, trade-marks, geographical indications, industrial designs, patents, layout-designs, topography of integrated circuits, and undisclosed information. Through it has been noted that a number of different types of IPRs could affect transfer of technology,<sup>1</sup> those referred to most often in the context of transfer of technology are patents and protection of undisclosed information. This section will therefore focus mainly on patents and undisclosed information or trade secrets.<sup>2</sup>

This section begins with a clarification of the scope of the issue, and then examines the various aspects to be considered in any assessment of the effects of IPRs on technology transfer. This provides a basis for a simplified conceptual framework to identify the main effects of IPRs on technology transfer, which is followed by a summary of the empirical evidence on the effects of IPRs on transfer of technology.

### Scope of the Issue

An important aspect to be borne in mind regarding the effect of

IPRs on transfer of technology is that protection of the technology has to provide the possibility of its transfer. A fundamental feature of IPR systems and of the TRIPS Agreement,<sup>3</sup> particularly in the area of patents, is to provide incentives for the generation of new technology by giving the inventor an exclusive right subject to certain exceptions over the use of his invention for a finite period of time. Such an exclusive right protects the results of investment in the development of new ESD technology, and provides an incentive to conduct, and disseminate to license, such research and development. This paper does not discuss the issue of the effects of IPRs on technology generation, but focuses only on transfer of technology.

Further, the effects of IPRs on technology transfer are by definition limited to technologies subject to such rights. Most technology is in the public domain, either because protection was never sought in the first place or because any form of protection granted has expired. It should be recalled that in order to benefit from patent protection, it is necessary to obtain a separate patent in each jurisdiction and that patent is only valid in that jurisdiction. The extent to which patents are sought and granted varies greatly from country to country.<sup>4</sup>

In addition, different commercial considerations apply to technology subject to IPRs depending on whether it is under private control or under the control of a government. When an ESD is under the control of a government, the government is of course free to transfer the technology on commercial terms. Even when IPRs in ESD are privately owned, such IPRs do not stand in the way of public financial

assistance to enable their voluntary transfer on commercial terms.

### Effects of IPRs on Technological Transfer

The public policy rationale for IPR systems lies in striking an appropriate balance between the interests of producers and users of technology, which provides incentives for the generation of new technology. This means that there will be instances where the result of an IPR regime is that payment has to be made to use technology that would otherwise be available at no or little cost. This will be the case particularly where technology is readily replicable, including through reverse engineering, without the assistance of those who developed it. Where such technology is protected by IPRs, users will have to seek authorization of the IPR owner, usually in return for a consideration, when in the absence of IPR protection the technology could be used even against the will of the person who developed it. An example of such readily replicable technology would be various types of computer software.

However, much technology is not capable of being readily copied or reverse engineered since its effective use requires access to secret know-how in the hands of the enterprise that developed the technology. In these circumstances, transfer of technology requires cooperation between the owner of the technology and the enterprise that wishes to access it, even in the absence of IPR protection. The likelihood of such technology being made available on reasonable terms or being made available at all is greater where adequate and effective intellectual property protection is provided. The rationale that is the source of the technology will be concerned that the legal regime in the host country provides safeguards against the dissemination of secret know-how beyond the terms of contract into the hands of third parties,<sup>5</sup> since such know-how

1. For example, the importance of copyright has been stressed by technology transfer for software, integrated circuits, considered important by the countries, source countries, inventors' rights in the food industry, industrial design for industries such as clothing, automobiles, and electronics, and trademarks could have significant implications for technology transfer in general industries. See World Bank, Transnational Corporations and Management: Economic Issues (1985), Industrial Property Rights and Foreign Direct Investment, United Nations, New York.

2. A patent gives the right to exclude others from the use of a technology for a limited time period. Protection of undisclosed information does not constitute such exclusive rights, but only operates against disclosure, acquisition and use in a wide range of ways by licensed commercial practices.

3. The objectives of the TRIPS Agreement include promoting technological innovation and "the transfer and dissemination of technology to the mutual advantage of producers and users of technological knowledge in a manner conducive to social and economic welfare, and to a balance of rights and obligations." Article 7, Member's. The TRIPS Agreement contains some specific requirements on developed countries, including: "Particular attention shall be paid to the needs and interests of developing countries." Article 66.

4. The TRIPS Article 16 does not state on this aspect.

5. For example, through technical staff that have been trained in the secret know-how using the information, or through direct buying it available to a competitor.

which may be critical for its competitive position worldwide, only remains protectable as long as it remains secret. In the absence of such guarantees, the enterprise may refuse to transfer its technology (or its most recent technology) or only do so on terms which discount the risk (i.e., at a higher price). By the same token, an enterprise that wishes to receive technology will be more reluctant to enter into a commitment to pay royalties for the use of the technology in an environment where the legal regime will not provide guarantees against its local competitors gaining access to the same technology for free. Thus, in the absence of intellectual property protection, both the enterprise that possesses the technology and the enterprise that seeks it may be more reluctant to enter into a contract for its transfer.

In addition, there are other reasons why a functioning intellectual property regime will facilitate transactions for the transfer of technical<sup>5</sup> (2).

The possibility of transferring any technology depends, *inter alia*, on information about the technology and access to the technology. One of the purposes of the patent system is to encourage inventors to disclose new technology rather than attempt to keep it secret. The requirement that new technology becomes part of the common pool of knowledge of mankind has two important positive implications for the technology transfer process. First, its combination with the recognition to patent rights, for use for experimental purposes,<sup>6</sup> it ensures that the technology becomes immediately available as a basis for further technological development. Second, it ensures that, on the expiry of the patent term, the technology falls into the public domain and its use is freely available to all.

The disclosure requirement also has a number of important consequences for the transfer of and access to technology because the resulting information, which is stored and classified in patent documents

that, is accessible to anyone, including to those in countries where a patent has not been sought, and "constitutes the single most valuable and comprehensive source of technology available in the world today."<sup>7</sup>

Another advantage of the patent system is that, because the technology that may be the subject of a transfer agreement has already been described in an officially approved document, it creates the need for a special detailed description in the transfer agreement and thus reduces transaction costs. Also, because the patented technology has been recognized by a patent office as technology which is new and truly inventive, it gives security to the recipient that the technology that is being transferred has these characteristics.

In the absence of effective protection for intellectual property, an enterprise which possesses technology will be reluctant to give detailed secret information about its technology to an enterprise which is considering purchasing it before that enterprise has committed itself to pay for it, since the recipient enterprise will not need to pay what it has already been told. Yet the enterprise that seeks the technology will not be prepared to make a commitment to pay for it until it has adequate information about the technology. An enterprise that protects intellectual property will facilitate the necessary exchanges of information required for the conclusion of a transfer of technology contract.

Another factor that should not be underrated is the psychological importance of IPR protection both for transfers through licensing and joint investment. A number of empirical surveys of business attitudes have confirmed this.

In the event that there is tension between the objectives of promoting technological innovation and the transfer of technology, patent regimes include a possibility of providing compulsory licensing for non-competitive licensing and control of anti-competitive practice under

specified circumstances.<sup>8</sup>

## CONCLUSIONS

The factors determining transfer of RDT are essentially the same as those determining transfer of technology in general. Technology transfer takes place in several ways including foreign direct investment, joint ventures, licensing of technologies, reverse engineering, and off-the-shelf purchase of machinery. A number of factors determine the transfer of technology through these different means, such as the economic and political stability of the host country, its technological and infrastructural facilities, information about the technology, access to finance, labor skills, and the IPR regime.

Empirical evidence shows that an IPR regime creates a psychological sense of security for those transferring technologies. However, the role of IPRs in technology transfer varies across different activities and industries. A large amount of technology is not subject to IPRs, i.e., these technologies are in the public domain. Among the technologies subject to IPRs, patents are not the most important form of protection in many cases, especially for those technologies which are not easy to replicate. Patents are more important for technology transfer in industries whose technologies can be readily copied. For other industries, trade secrecy protection may be more important.

Information about technologies, access to finance, and technological capability are important factors determining the acquisition of technologies. Disclosure under patents and links with joint venture partners or foreign technology suppliers have been shown to be important means of acquiring information about the technology.

In analyzing the effects of IPRs on technology transfer, a distinction has been made between technologies that are readily copyable, including through reverse engineering, and technologies whose transfer requires access to secret know-

<sup>5</sup> See, for example, Article 2(1) of the TRIPS Agreement.

<sup>7</sup> WIPO Background Study (International Intellectual Property, 1997), 194.

<sup>8</sup> For more detail on this matter, see WIPO, 1997, 194.

how that can only be obtained in cooperation with the technology supplier. In the former case, IPRs mean that access, at least for commercial purposes, to technology that could otherwise be easily replicated depends on the agreement of the IPR owner, or if that is not forthcoming, on meeting the conditions necessary for obtaining a compulsory license.

The public policy rationale for imposing on the user a cost that it would not have to bear in the absence of IPR protection is that of striking a balance between the interests of the creator and users of intellectual property, that provides incentives for the generation of new technology. In the latter case, i.e. technology that is not easy to copy

and requires the cooperation of the supplier to be properly transferred, there are reasons that suggest that a favoring IPR system will not only make suppliers more willing to make technology available but also that, in some circumstances, even those demanding the technology might be more willing to acquire the technology.