Role of Intellectual Property Rights in Technology Transfer

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1. Introduction

In current global scenario, innovation and creativity provide companies and nations a cutting edge over their counterparts. Continuous evolution of new products vis-à-vis new technology is required for economic development and growth of companies and nations. Technology is nothing but an output of intellectual endeavors of a human being. Such output in management parlance is known as Intellectual Capital. Intellectual capital provides companies with products and/or services that can dominate the market. Therefore, the success of a nation or a company is determined by their technological superiority and intellectual capital. Similarly, the intellectual capital of a company may assist the company in its various trade transactions.

2. What is Technology Transfer?

Technology transfer involves sharing of skills, knowledge, expertise, methods of manufacturing, manufacturing facilities, etc. associated with a particular technology between two or more parties. Technology transfers ensure that the scientific and technological developments are accessible to a wider range of users. These users can further develop and exploit the technology to come up with new products, processes, applications, materials or services.

The parties involved in technology transfer generally are technology companies, research organizations, universities and colleges, and Government organizations. The process of technology transfer is generally based on mutual interests of the parties and mutual agreements between the parties. The objectives behind technology transfers include commercialization of technology, and dissemination of technology. Thus, technology transfer enables a wider range of users to have access to the technology for social and economical development.

3. Why Technology Transfer?

Technological superiority and intellectual capital undoubtedly provide nations and companies with cutting edge over their counterparts. However, in current global economy, growth of trades depends on cross-disciplinary and cross-border collaborations. In this context, technology transfer serves as a means for synergistic techno-commercial collaborations. Through technology transfer, the parties involved are mutually benefited. The technology transfer may take place between two technology companies, or a university and a technology company. Further, the parties involved in technology transfer may be located in different countries thereby resulting in cross-border collaboration. For example, a technology developed by one technology company may be transferred to another technology company in a different geographical location. The motive behind this may be expansion of market for technology using the facilities of another technology company located at different location.

The other objectives of technology transfer may include cost saving benefits associated with a geographical location. For instance, a technology company or a university may not have funds to develop the technology or expertise to commercialize the technology. Hence, the technology may be transferred at a raw stage to another technology company for further development of the technology. Moreover, companies active in the transferred technology may come up with innovative applications of the technology to develop better products. Such cross-border collaborations lead to technological development of developing and under developed nations. For example, the technology transfer in areas like green technology can bring about a revolution in energy conservation and prevention of pollution worldwide.

Although, technology transfer is mostly based on contractual agreements, IPR also plays an important role in governing the technology transfer. For a fruitful technology transfer, a technology should be well guarded by IPR.

4. Role of Patents and Other IPR in Technology Transfer

IPR regulations of a particular nation provide a legal framework for technology transfer. In particular, patent system provides an inventor the right to exclude others from utilizing the technology discovered by him without his consent. Whereas, through technology transfer the inventor may allow others to utilize his technology on certain terms and conditions. Therefore, IPR plays an important role in technology transfer. For example, if the technology to be transferred is protected by a patent or any other form of IPR, the parties involved in the technology transfer need not solely depend on contractual agreements. Instead, the parties can form well-defined licensing agreements. A licensing agreement[1] includes well-defined clauses such as, royalty rates, exclusivity, etc. Thus, the license agreement may serve as a more effective tool for a healthy and fruitful technology transfer as compared to contractual agreements.

On the other hand, if a transferee is located in a country that does not provide patent protection, the parties may have to rely on contractual agreements. Such arrangements are associated with high commercial risk, especially for a transferor of the technology. Moreover, these transactions do not guarantee protection against practicing of the technology by a third party. In another scenario, the transferor of the technology may belong to a country that does not have patent protection. In such a case, managing a healthy and fruitful technology transfer may become difficult. Whereas, technology transfer involving patented technology guarantees protection against copying and unauthorized use of the patented technology.

A technology well guarded by patents has more advantages. For instance, a potential transferee can acquaint himself with a patented technology well before the actual technology transfer. Whereas, a technology transfer of a non-patented technology may involve the risk of technology being disclosed prior to the

[1] License agreement indicates a consent by the owner of the IP for use of the IP by the licensee in return of certain value (e.g. royalty).

technology transfer. Thus, typically a technology is disclosed once the parties sign a confidentiality disclosure agreement or through secret disclosures. Although the parties enter into contractual agreements, there is again a risk involved in disclosing the technology to a third party. As a result, the transferor may set up higher royalty rates for the technology to be transferred.

5. Phases in Technology Transfer

The entire process of technology transfer may be variedly divided into different phases. However, taking into consideration the focus and scope of this article we divide the process of technology transfer in following phases:

1. Creation of Intellectual Property (IP)
2. Protection of IP
3. Identification of a Need for Technology Transfer
4. Identifying the Transferee or Transferor
5. IP Assessment of the technology to be transferred
6. Formulating conditions for Technology Transfer
7. Implementing Conditions for Technology Transfer
8. Monitoring the Conditions

Although, the actual process of technology transfer does not start at the 'creation of IP' and 'protection of IP', these two phases have been considered for the sake of completeness of the process. Creation of IP is about discovering and/or developing a new technology that can be commercialized. Protection of IP involves securing patent or any other IPR protection for the new technology. The actual process of technology transfer starts once a need for technology transfer is identified. Generally, the need for technology transfer is identified based on certain commercial objectives of the transferor and/or the transferee. Subsequently, a transferor or a transferee may be identified based on the need for technology transfer. For example, a university that has developed a technology may identify a technology company for further development of technology or commercialization of the technology or both.

Upon identification of the transferor or the transferee, IP assessment of the technology is performed. The IP assessment may involve assessment of the technology based on technical evaluation, financial evaluation, commercial evaluation, etc. Based on the IP assessment, if the parties decide to go ahead with the technology transfer, the conditions for transferring the technology are formulated by the transferor and/or the transferee. The conditions for transferring the technology include negotiations and licensing agreements. The actual transfer of the technology takes place once the conditions are agreed upon by parties involved, after the transfer of the technology, the transferor monitors the conditions agreed upon.

6. IP Assessment of a Technology to be Transferred

The IP Assessment of the technology to be transferred is done to evaluate the technology on various factors. In general following factors are considered while evaluating the technology:

1. Uniqueness of the discovered technology
2. Patentability of the technology (if not patented).
3. Place of the technology in an array of other similar technologies.
4. If the technology is already patented, assessing the strength of the patent.
5. Cost involved in protecting the technology and maintaining the IPR protection, etc.
6. Requirement of additional in-licensing for practicing the technology.
7. Know-how or trade-secret associated with the technology in order to achieve the best results by practicing the technology.
8. Other exclusive or non-exclusive licensing agreements associated with technology.

In addition to above-mentioned factors, some other factors such as, competitor analysis, market potential, financial evaluation, technical evaluation and industrial scalability may also be considered for performing the IP assessment.

The objective of the IP assessment will generally remain same for both the transferor and the transferee. For example, a common objective of the transferor and the transferee may be to get an insight about the position of the technology in an array of similar technologies.

However, in certain cases the objective may differ. For instance, the transferee may perform IP assessment of technology to know whether any additional in-licensing is required for practicing the technology. Whereas, the transferor may under take IP assessment to show the strength of the patent that protects the technology.

Based on the results of the IP assessment, the transferee and/or the transferor may take strategic decisions regarding the proposed technology transfer. For example, a licensing strategy may be developed by the transferor and/or transferee based on the IP assessment.

7. Technology Transfer and Licensing

The parties involved in technology transfer generally have different interests. However, for the technology transfer to take place the parties should have some mutually beneficial interests. Further, these interests should be agreed upon in the contractual agreements, including technology license for a successful technology transfer. For example, consider a scenario of technology transfer between a university and a technology company. The interest of the university may be to acquire expertise to commercialize the technology. On the other hand, the technology company may be interested in commercializing the technology for accruing revenues and profit. Thus, a contractual agreement between these two parties will result in benefit to both the parties.

Generally, when the parties have some common interests in technology, the negotiation for technology transfer begins. It is important for both the parties to sign confidentiality agreements (Non-Disclosure Agreements). Additionally,

Interim Agreements, Feasibility Agreements, and Prototype Agreements may also be used depending upon the nature of technology to be transferred. However, it is not advisable to use memorandum of understanding and letter of intent in technology transfer transactions as these are not agreements, but a mere statement of intents and future plans.

Amongst all the agreements involved in technology transfer, licensing agreement is the most important agreement. License may be granted for IP that is necessary to further develop, reproduce, make, use, market, and sell products based on the technology to be transferred. The terms and conditions of a licensing agreement determine the success of the technology transfer. Therefore, while formulating the licensing agreement, the parties involved should define the technology to be transferred without any ambiguity. Certain factors to be considered while defining the technology in the licensing agreement include:

- type of the technology i.e. product, process, facility, software, formula, etc.;
- need for additional license for practicing the technology;
- industrial standards or specifications associated with the technology; and
- details required to practice the technology.

Other factors that need to be considered for a successful technology licensing are:

- owner/s of the technology;
- nature of ownership;
- other non-exclusive or exclusive licensing associated with the technology;
- assistance required from the licensor to further develop or practice the technology;
- other IPRs such as trademark, copyright, trade secret, etc. associated with the technology;
- nature of technology (e.g. stand alone technology, platform technology);
- scope of rights expected from the technology license;
- territory and industry in which the technology can be utilized; and
- terms and value of royalty, etc.

8. University-Industry Collaboration

The universities have the required talent pool for developing new technologies or for enhancing the existing technologies. The universities have a special technology transfer office dedicated to identify technologies developed indigenously in the university that have potential for commercialization. However, the universities may not have the resources or expertise required for commercialization of these technologies. To fill this gap, universities may enter into collaboration with the industrial players through technology transfer agreements. Alternatively, the universities may enter into joint venture or partnership with the industrial players. Such kind of collaborations are highly synergistic in nature as the research gets the best talent from the universities and the required funds from the industrial player to achieve the best results. The trend for University-Industry collaboration is on a high, especially after the enactment of Bayh-Dole Act and equivalent legislation in other countries. Further, these changes have provided additional incentives for research exploitation.

9. Conclusion

Technology is one of the main stays in economic development of industries and nations. Technology needs to be disseminated so that a large number of users have access to the technology for developing new products and for further developing the technology. IPR plays a very important role in technology transfer. For the success of technology transfer the technology to be transferred needs to be protected by IPR. If the technology is not protected by IPR then the success of the technology transfer depends solely on the contractual obligations between the parties. Technology transfer based on the contractual agreements is again prone to leakage of technology to the third parties thereby hindering effectiveness of the technology transfer. If the technology is well-protected with patents, the effectiveness of technology transfer can be monitored through licensing agreements.

The trend for technology transfer is on the high especially after the enactment of Bayh-Dole Act.

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