

## Technology Transfer, Marketing and Commercialization

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### ABSTRACT

**IPR is now a necessity to give its economy the required competitive edge. There should also be some strategy for linking knowledge incubators with business enterprises. For this, there is a need to integrate IPR in the knowledge generation and transfer process. Institutions shall be encouraged to seek protection of intellectual property rights in respect of the results of R&D. 'Institutions' would mean any technical, scientific or academic establishment where research is carried out through funding by the central/state government. The institutions shall take the necessary steps to commercially exploit patents on exclusive or non-exclusive basis. The licensing is to understand who are the parties to the agreement, their objectives, and performance expectations. Creating a license team consisting of technologists, legal experts, business executives, and financial experts.**

### INTRODUCTION

The first requirement for an organization to transfer a technology is to established legal ownership of that technology through intellectual property law. There are four generally recognized forms of intellectual property in industrialized nations:

- Patents, these provide for an exclusive right for using or selling an invention for a period between 15 and 20 years from the filling date.
- Trademarks, refers to any signs or symbols registered by a manufacturer or merchant. Protection is valid for 10 years which is renewable.
- Copyrights, this is used for protecting the rights of original works of authorship including literary, artistic and scientific

works. The duration of copyright extends to the entire life of the author plus 50 years.

- Trade Secrets, they are protected without publication. This is an indirect type of protection based on the factual characteristics of information and its business value.

The Second step in technology transfer is finding a suitable recipient for the technology - one that can use the technology and has something of value to offer in return. The Technology Transfer comprises the following elements:

- Feasibility studies, market surveys, etc.
- Determination of technology
- Technical Process
- Designs and drawings
- Plant Construction and installation
- Training of technical and managerial personnel
- Management of production facilities
- Marketing information
- Improvements to processes and product design.
- Mechanisms of Transfer

The elements of technology mentioned above can be transferred either individually or in combination. There are several ways to acquire technology by a firm. Some of these are given below:

- Reference to books ,journals and other published information
- Movement of persons across borders
- Education and Training
- Exchange of information and personnel through technical collaboration
- Employment of foreign experts or consultants
- Import of machinery and equipment
- Licensing agreements
- Foreign direct investment

The different modes of technology transfer can be classified as direct and indirect. The indirect modes can take several operational forms, such as foreign direct investment, licensing, turnkey jobs, know-how agreements and technical service contracts. Technology Transfer can be categorized into three types of transactions:

#### **Simple Transaction**

In this type of transaction, the buyer is aware of the price of each component and knows the exact requirements. In such a situation, a firm tries to source its requirements competitively. The elements are non-oligopolistic in nature.

#### **Process Package Transaction**

There are variations in the process package transactions ranging from the supply of whole plants on a turnkey basis to the sale of packaged sub-processes.

#### **Project Package Transaction**

This is similar to a turnkey transaction and works in one direction—from one seller to one buyer. There is little 'learning by doing' in such transactions.

The survival of a company thus depends on its key components and key technologies. However new technologies are becoming more of a joint effort rather than the isolated efforts of individual companies. The technologies are created, developed, brought into the market and diffused using a complex mechanism. This leads to three different modes market, hierarchy and network. Market mode involves the open selling and buying of technologies. Hierarchical mode mostly involves the centralized forms of corporate organization, either through vertical or horizontal integration of investments. Network mode is a form of cooperation where technology exchange between enterprises can take place at a single point. This kind of corporation could cover R&D and commercialization involves licensing of technology for production and, marketing of products in different markets.

Once the organization has at least started to establish ownership of the technology, there are several possible legal and /or contractual mechanisms for transferring technology from one organization to another

#### **Transport/migration:**

The movement of a new product or process from one place to another. Alternatively, experts' embodying' the technology migrates from one place to another to effect the transfer of technology

#### **Imitation:**

This is about the cheapest way to acquire technology as it saves on the high cost of R&D. This method is, however, possible only when there are experts within the country/company.

#### **Transplantation:**

One way to transplant production units to another country is by creating enclaves. There has been a different kind of transplantation such as 'ghettos', factories, plantation, multinational plants and tourist enclaves.

#### **Subcontractors:**

Some isolated bits of the total innovation process are given to subcontractors by the original innovators for mutual benefit.

#### **Mission / development aid**

The concept of development aid has changed to development cooperation in recent years, whereby the developed countries transfer certain skills to developing countries.

#### **Joint Ventures**

This entails a balanced relationship between the participating companies.

#### **Investments**

Some countries invest in R&D institutions. For example, the Indian government has set up several scientific institutions under the Council for Scientific and Industrial Research (CSIR)

#### **Patent and licenses**

The patent system provides for protection in the market against local and foreign competition licenses, on the other hand, authorize the commercial exploitation of a patent.

#### **Information Exchange**

There is information flow among institutions in the world.

#### **Staff training and exchange**

The training of science and technology manpower abroad is necessary for various kinds of technology transfers.

#### **Consulting activity**

Experts provide consultations to companies.

#### **Cooperative R&D**

There are cooperative R&D efforts such as CERN in Europe.

#### **LICENSE AGREEMENT**

By a license agreement the technology owner or rights holder grants a license, or a permission to use, the intellectual property, to the licensee. The licensee by the terms of the license is permitted to exploit the intellectual property. The licensee financially compensates the licensor for the use of the rights granted by the

license. Generally, the licensor is passive in this legal relationship. The licensor does not necessarily further develop the intellectual property, nor participating in its marketing, but passively receives the financial compensation for having granted the license. Some of the general terms which need to be included in licensing agreements are:

- Fees & royalties
- Timing of payments
- Audit Control
- Quality Control
- Secrecy
- Patent and trademark rights and protection
- Product-development programmes
- Supply of ingredients
- Performance and market development
- Investment
- Assignment of license
- Termination of license
- Disputes and arbitration
- Penalties and sanctions for non-compliance

#### **Exclusively dealing in a license:**

Exclusively means the right to exclude others from exploiting the intellectual property. In the pharmaceutical sector, most intellectual property licenses are granted on an exclusive basis. Just as a patentee relies on being the only person entitled to exploit the patent, so also a licensee seeks to be the only person entitled to exploit the patent. An exclusive license is one therefore where the licensee exploits the intellectual property to the exclusion of all other people, including the licensor. This means that the licensor, by granting an exclusive license, gives up the right to exploit the intellectual property itself.

The essential characteristic of an exclusive license, and which makes the license an exclusive one, is that the owner of the intellectual property cannot:

- License anyone else, nor
- Exploit the Intellectual Property itself.

In contrast, a non-exclusive license is one:

- Where the owner of the intellectual licenses one licensee.

- It is able to license other licensees as well
- And retain the right to exploit the intellectual property itself.

A licensor can therefore grant numerous non-exclusive licenses. In the pharmaceutical sector a non exclusive license is similarly unusual where given the extent of speculative investment a pharmaceutical licensee will seek to be the only person entitled to exploit a patent. A non exclusive license however will not be the appropriate type of exclusivity that a licensee of a pharmaceutical product will expect.

#### **Marketing and Commercialization**

The Commercial Evaluation is a continuous and ongoing process, the process should start before you invest time and money in an idea that may not have salability. All too often people spend countless hours and thousands of dollars on ideas that are not commercially feasible. The world may not want you "better mousetrap" if it is too expensive to build or maintain, or if there are no more mice to catch. Less than 5 percent of all patented inventions make money, and the percentage is even lower for small, independent inventors. Big corporations can spend millions of dollars on research and development before finding a commercial success, whereas the smaller inventor cannot afford to do so.

#### **Conclusion**

Technology Transfer can be considered successful if a receiving unit can routinely reproduce the transferred product, process or method against a predefined set of specifications as agreed with a sending unit and/or a development unit. A dedicated technology transfer organization should set up to facilitate and execute the process. To achieve this end, it's recommended that company should adopt a rigorous process to select its contract manufacturing partners to prevent issues in the future collaboration process. Provide strong support for scientific education and for basic research in areas that are important to the nation. It is important to remove barriers to the free flow of science and technology. Seeking global technological integration is far better for a world than political restrictions on the transfer of technology.

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