



## **Developing Technology Transfer Using Plant System prediction Models**

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### **ABSTRACT:**

The idea of this paper is to examine about success and pathway for technology transfer. The more in depth about technology transfer is described in this paper. The process of transferring skills, information, technologies, methods of built-up, and services is known as technology transfer. Successful technology transfer demands an included move towards in order to plan, implement, estimate and get better the transfer process compressible. For quantitative the technology level various models have been developed and applied for transferring technology. It is essential to develop a mechanism of integrating the quantified technology level of each process into the total performance of the plant. In this paper I shall present the importance of technology transfer and how the technology transfer works.

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**Keywords:** Technology transfer, Small and medium enterprises, Technology transfer model, TT problem.

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### **I. INTRODUCTION**

In reality, today, the transfer of developed technology has become an important part of the intercontinental business strategy of compact. "One of the elementary processes that control the money-making performance of nations and firms is technology transfer. Economists have long acknowledged that the transfer of technology is at the heart of the process of economic growth, and that the progress of both developed and developing countries depends on the extent and efficiency of such transfer. Technology transfer is an area of importance not just to business, economists, and technologists but also to other disciplines such as anthropology and sociology. Depending on the attributes of the technology, its future use, and the motivations of the transferee and transferor, a extensive range of technology transfer modalities are accessible [1].

However, from the perspective of business and technologists the main focus of technology transfer is to improve the aggressive advantage of firms through the enhancement of customer value. It is envisaged that, through the improvement of competitive advantage, a rigid and its partners collaborate in the technology transfer will gain financial and other strategic benefits. Technology transfer is the process of transferring skills, knowledge, technologies, methods of manufacturing, and facilities. Unsuccessful cases in technology transfer frequently occur due to a failure in recognize in the approved manner technology quintessence, phases, and hierarchies involved in the transfer process of technology. Technology transfer is process by which a developer of technology makes its technology available to commercial partner that will take advantage of the technology. There are two types of technology transfer, vertical technology transfer and horizontal technology transfer.

### **II. TECHNOLOGY TRANSFER DEFINATION AND MODELS**

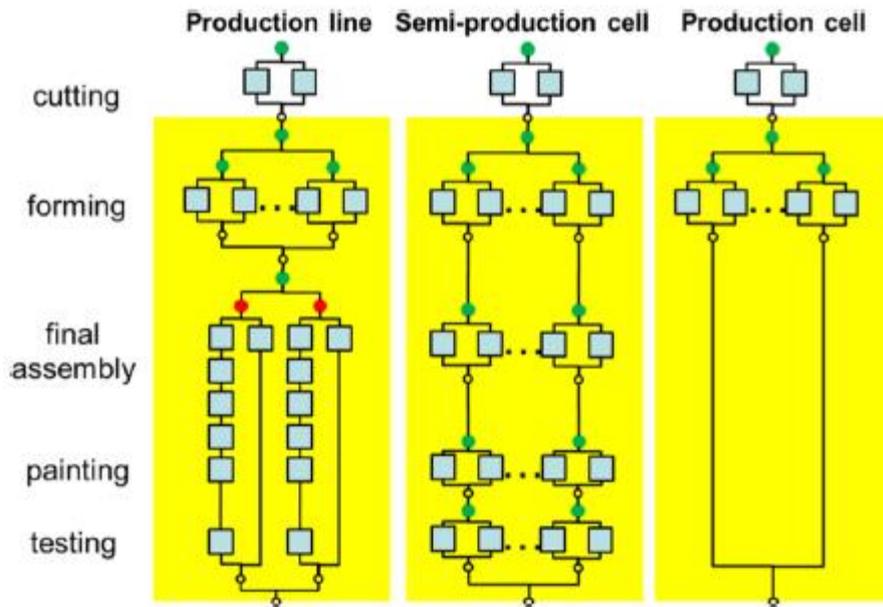
The term technology transfer can be defined as the process of movement of technology from one entity to another. The transfer may be said to be successful if the receiving entity, the transferee, can effectively utilize the technology transferred and eventually assimilate it. Technology transfer has also been used to refer to movements of technology from the laboratory to industry, developed to developing countries, or from one application to another domain. In a very restrictive sense, where technology is considered as information, technology transfer is sometimes defined as the application of information into use.

Models of technology transfer are as follows

#### *A. Plant System Prediction Model*

A plant system prediction (PSP) model will be explained in this section. Even if the technology- level performance in each process is quantified, a mechanism to integrate the quantified technology level into the total performance is necessary to quantify the performance of the whole plant [1] (Yasuo Yamane). Based on the framework for developing a PSP model, the requirements for the development have been specified first. Two kinds of performance measures are specified. The first measure is the production level measured by the standard production time divided by the actual

production time. The second measure is the quality level measured by the quantity of products approved without recovery divided by the quantity of total products produced including defects and recovery.

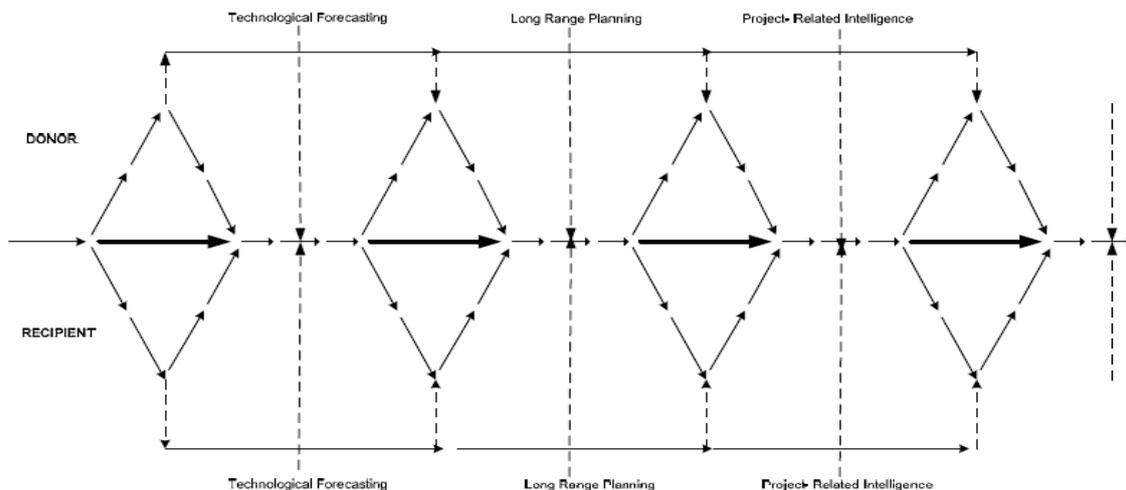


**Figure A. Develop Structure of PSP Model [1]**

Based on the framework for developing a PSP model, the requirements for the development have been specified first. For evaluating the two kinds of performance measures for three kinds of production systems, the plant system for each production system was decomposed into processes, and the developed structure of process for the PSP model. In the developed structure of the PSP model, a serial connection of cutting, forming, final assembly process, painting, and testing is expressed by serial connection of function nodes with some parallel processes in each process. Every process in the three production systems operates in two shifts, day and night shifts, and this is expressed by parallel connection with the OR node.

**B. The Bar-Zakay Model**

Bar-Zakay (1971) developed a rather comprehensive TT model based on a project management approach. He divided the TT process into the Search, Adaptation, Implementation, and Maintenance stages. He depicted the activities, milestones, and decision points (go or no-go) in each of these stages as shown in figure [3] (Jagoda).



**Figure B. Bar-Zakay model of technology transfer**  
 Source: Jagoda (2007) [3]

The upper half of the figure delineates the activities and requirements of the transferor (referred to as the “donor” by Bar-Zakay) and the lower half that of the transferee or the “recipient.” The activities to be carried out are specified in detail in this model and the importance of both the transferor and transferee acquiring skills to undertake technological

forecasting, long-range planning, and gathering of project-related intelligence is emphasized. The model uses the term “donor” for the transferor giving the impression that the owner of technology is giving away a valuable asset out of altruistic reasons. This is clearly not the case and the use of such terms must be avoided. There is a need for a comprehensive examination of the entire TT process from “search” right through to “post-implementation” activities. A process approach must be adopted in planning and implementing TT projects.

### III. IMPORTANCE OF TECHNOLOGY TRANSFER

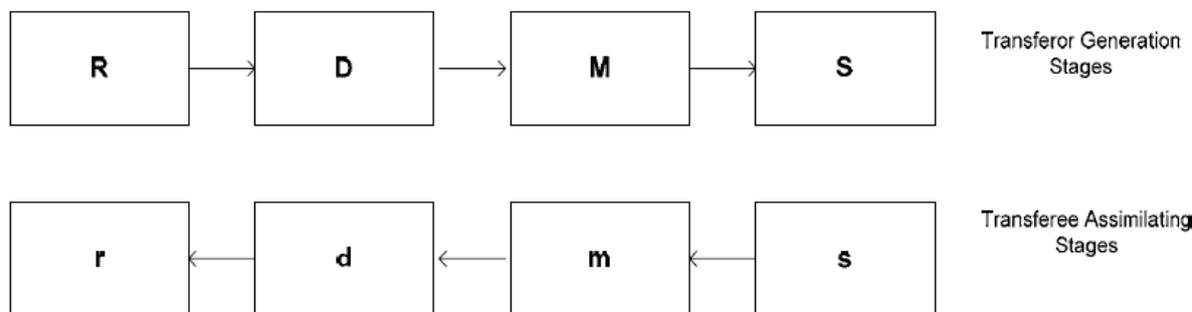
- Demonstration of necessary information for technology transfer from research and development to actual manufacturing.
- Demonstration of necessary information to technology transfer of existing product between various manufacturing places.
- For the smooth manufacturing of commercialized products.
- It is important to expend comprehensive analytical effort in establishing the need for a technology transfer project prior to the commencement of a TT project.
- It is important for transferees to develop sound engineering and project management skills without which the technology transfer process cannot be managed effectively.

General impact of technology transfer

1. Important of the research pertinence and its promotion in foreign countries.
2. Promote in disciplinary project to be develop in the region of interest.

### IV. MODES AND MECHANISM OF TECHNOLOGY TRANSFER

According to Amsden, learners do not innovate and must compete initially on the basis of low wages, state support, high quality and productivity. The route that must thus be pursued should be based on transfer, absorption, and adaptation of existing technology. This viewpoint fits in with the material, design, and capacity transfer progression. The terms innovation and exnovation, as used as, while useful, may cause confusion to practitioners since the term innovation is used in many different contexts [2] (Stefanou). Thus, in this paper the technology development stages of the transferor and transferee will be referred to as “technology generation” and “technology assimilation” respectively.



**Figure D. The technology development chains of the transferor and transferee [2]**

Using the “technology development chain” concept outlined in figure. the simplest form of technology transfer could be said to take place when an owner of technology (the transferor) transfers the technology needed by a business partner (the transferee) to sell and service a product produced by the owner. The representation within parentheses implies that a product at the end of the “generation” stage is simply being sold and serviced by the transferee. The technology likely to be transferred here is that needed by the transferee to sell, repair, and provide other elements of after-sales service to customers buying the product. The objective of the transfer is to effectively maximize the sales of the product in the region managed by the business partner.

### V. CONCLUSIONS

This paper commenced with an overview of technology transfer and then presented some important models of technology transfer that have been developed over the decades to help firms plan and manage technology transfer. In this paper, a procedure for developing plant system prediction (PSP) models was proposed for investigating the effectiveness of technology transfer in a plant. The formulated relationships at each process are integrated into the function of the plant, that is, the PSP model. The developed procedure will be utilized to propose management change. Before utilizing the developed procedure and PSP model, more case studies may be necessary. Also other models description is show in this paper. In this paper we represent about technology transfer and their definitions and model of technology transfer. For

developing the PSP model, the requirements based on across-interaction matrix and objectives tree are specified. In this paper importance of technology transfer and impact of technology transfer are shown.

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