TECHNOLOGY TRANSFER: AN OVERVIEW AS RELATED TO LDCs

Abbass Alkhafaji

ABSTRACT

The Technology Transfer issue has aroused much controversy in the last two decades among management researchers. This paper attempts to discuss the problems of Technology Transfer, the debate on this issue and some of the theories concerned. It also presents a suggested theoretical framework to assist the LDCs in determining need for, and receiving of, new technology.

Introduction

For many years economists have concentrated on the importance of investment as a means of economic growth -- while technological changes have been considered as important determinants of growth, it was viewed as a passive exogenous variable rather than an endogenous one that could be modified through policy. Recently, however, the rate of technological innovation and development of technology has been considered a major endogenous factor in determining economic growth. This new concept has caused many nations to consider new technology as a way of developing their economies.

In an attempt to spur economic development less developed countries (LDCs) look to multinational corporations (MNCs) to provide them with the necessary factors such as capital, modern technology and skills which will serve as their link to the world markets.

The Purpose of the Study

This paper has three purposes, the first of which is to discuss the issue of Technology Transfer and the debate on this issue. The second purpose is to attempt to answer to important questions: a) From the LDCs' point of view, what are the economic, social, political and technological factors affecting the transfer policy? and b) How does the international environment affect the transfer process? The final purpose of this study is to present a strategic theoretical framework to be used as a guideline to LDCs in determining need for and receiving of new technology.

There are many definitions of Technology Transfer, a concise example of which is:

† Dr. Abbass Alkhafaji is a Professor in the Department of Management at Gettysburg College, Gettysburg, PA 17325

The author wishes to express his appreciation to Professors William E. Rosenbach and Bruce W. Bugbee of Gettysburg College and also to Professor M. Allam, Professor of Management at Cairo University, for their assistance.
that of a “process whereby technical information originating in one institutional setting is adapted for use in another institutional setting” (Doctors, 1969). Transfer implies a process linking the technology supplier to the technology user. How technology is transferred depends on “the type of technology and regulatory restraints, the size of the market, the sophistication of the user, and the costs and benefits to the supplier and user” (Driscoll and Wallender III, 1974).

The Importance of Technology Transfer

Technology Transfer was not viewed as a major issue for either developed or developing countries until the last two decades. In 1967 the concept of Technology Transfer was articulated and “Science and Technology were incorporated in the political language and decisions of the inter-American system (Ingerson and Bragg, 1976).

This articulation, however, did not extend immediately to a focus on science and technology in public discussions between the developed and developing countries until 1972. At the Conference on the Application of Science and Technology (CACTAL), held in that year, the issue of Technology Transfer was discussed for the first time (Driscoll and Wallender III, 1974). Since then, the issue of Technology Transfer has been of greatest interest to the developed and developing countries. This in turn, led to a series of inter-American working groups in 1974-1975. These organizations included government ministries which isolated important issues as a basis for discussion. Some of the issues at hand were:

1. Problems stemming from the transfer and development of technology through multinational enterprises.
2. The responsibility of the developed nations to participate with the less developed countries (LDCs) in the development of scientific and technological infrastructures.
3. Promotion of institutional mechanisms to improve technology flows to the developing countries.
4. The responsibility of the host governments to develop local technology structural environments making technology absorption possible.

The identification of these issues undoubtedly is evidence of concern with Technology Transfer and with the complexity of the transfer process in which governments of developed and developing countries have a common responsibility for strengthening technological infrastructures in the Third World.

Additional evidence of the increasing importance of the issue of Technology Transfer is the foundation of the International Executive Sessions Corps (IESC) in 1964. The IESC is an organization committed to transfer technology throughout the world by assisting firms in the developing countries in overcoming specific problems that demand specialized know-how on both the original and technical levels.