Technology contribution importance to developing countries

In this world many things can be shared, transformed and utilized which helps to the development of civilization, but knowledge is the rarest of rare wealth that cannot be stolen and it remains intact with a person until it is expressed. Once it is expressed, there is no guarantee how it is used and manipulated. To control this unauthorized use of technology several laws like patent laws, copyright laws etc were drafted all around the world. Knowledge is recognized as one of the capable resources for dynamic global business environment. (Sharif et al.)Technology transfer is not an easy issue it has potential to influence the political and financial relations of countries also. Multinational companies are having a rare opportunity to transfer the new technology to the developing countries. In recent times the link between the technology transfer and foreign direct investment through multinational companies became central plank of the issue in all international economics and economic growth debates.

Importance of technology transfer from MNC’s to developing countries:

Transfer of technology by Multinational Companies is considered as a boon to the developing countries. Every developing nation rather than depending on the cheap labor to develop economy should also focus on the intellectual capital and innovation capabilities. So there should be attractive polices from the government to make sure that multinational companies should co-operate to raise the research and development capability in the nation. Multinational companies are capable of technology diffusion, knowledge creation and research & development capacity (Worasinchai and Bechina 2010).

There are several means of technology transfer and mutual benefit is derived out of it for both the developing nations and the multinational companies. Some of the factors that have major impact upon the knowledge sharing mechanisms are firm characteristics, industrial characteristics and business models. During the last decade with the growing globalization spectrum, foreign direct investment's (FDI's) are coming to developing countries. Multinational companies are capable of creating new jobs thereby contributing to the development of economy and welfare of the region in particular. This will also improve the number of taxpayer due to improvement in the salary of the employees. This allows the government to spend this economic source in the areas of health care, education and infrastructure development (Bruce 1979).

Establishment of multinational companies paves way to the entry of developing nations into the global market which helps it to understand the modern values and business practices. Attracting multinational companies and thereby improving the foreign currency and foreign direct investment is a better option. Brining loans from the national development organizations, World Bank and other organizations with lot many agreements is difficult and instead, it is easy to encourage multinational companies to invest. Multinational companies are recognized as powerful engines for economic development than any other source (Bruce 1979).

Multinational companies improve competitiveness in the developing nations by influencing few aspects such as capital, exports, competence/skill, technology and infrastructure. Transfer of technology with synergistic effects are based on achieving “ reasonable compatible” goals between low developed countries and multi national companies (Madu and Jacob 2002).

With the WTO and GATT regime the entry of multinational companies became easy even in the developing orthodox communist nation like China. For every company and country technology and innovation are important in brining competitive edge. By liberalizing its policies China is planning to build its technology and innovation capacities through foreign direct investments. The technology transfer is done by multi national companies through various methods:

1. Forward and backward linkages of MNC’s with the local customers and firms.

2. Induction by the local firms after observing the patterns and process of MNC’s.

3. Recruiting the employees with experience in MNC’s.

4. Carrying out the research and development activities of MNCs in the host countries.

Direct transfer of technology is done through introducing new process techniques, capital goods, new products and new management skills. Direct transfer is the result of spillovers such as forward and backward linkages, competition effects and trained worker migration. The amount and level of knowledge transfers may be linked to the local industry characteristics. There should be a balanced level of absorptive capacity and technology involved in the work. So host country capability in absorbing that technological spillover is also a determining factor in technical advancement (Glass 2001).

China tops the developing nations with huge magnitude of foreign direct investment inflows with one third of total world FDI investments and even received more FDI inflows than US in early 2000s (UNCTAD 2005). Technology transfer to China from MNC’s is mostly through indirect effects. Several researches were conducted on these subjects revealed interesting conclusions. A research conducted in Venezuela during 1976-89 pointed out that “ spillovers” are minute from foreign enterprises or even negative from the joint ventures. A study conducted in Indonesia, found that domestic firms benefited through the high productivity leading to spillovers and not due to the foreign ownership.

Factors determining the benefits of host country:

On the other side of the coin, there is a chance of confining the indigenous technological growth capabilities. Local technological research and development is curbed and “ crowding-out” effects may also occur. Generally MNC’s will not transfer technology, as they wish to maintain monopoly over the market (Zhao and Zhang 2007). The technology transfer by the multinational companies is not appropriate to the host firms thereby affecting their chances to compete in the global market. There is a need to imbibe that technology by establishing those industries that are compatible to that transferred technology.

The American type technology transfer tries to monopolize the market and there exists a gap between receiving and providing countries in a particular industry that is expected to transfer technology. It is a type of reverse-order technology transfer. This will not result in any benefit to the host country and just provide an out-station (Kojima and Kiyoshi 1977).

Multinational companies also take enough measures to control the amount and kind of technology transfer through following measures:

1. Restricting the advanced technology to the subsidiary firms in the host nations.

2. Transferring the technology that will not tactically give advantage to the host nations.

3. Using the intellectual property laws to maintain the technological advantage.

4. Importing of key industrial inputs from the parent company to its subsidiaries thereby minimizing linkage effects.

There are some factors affecting the technology transfer policy in less developed countries including economic, social, political etc. Even the international environment is also affecting the transfer policy. At this point of time, technology, human resources and capital are the three sources affecting the business. There need to be a clear understanding of what is technology transfer, how it is properly done and who does it well. After achieving clarity on these questions, a specific authority is to be organized which keeps updates about what is available and what is needed in terms of new technologies. Transfer of right technologies to right destinations with right spirit, at right time should be done. (Saklou 2000)

Factors determining the viability of transferred technology in developing countries:

The transferred technology must integrate social, political, technical and environmental needs of host country, where basing on these only the benefits are tested.

Social factors:

Generally the MNC's will try to exploit the cheap labor available in the developing countries. They transfer the technology that will assist these labors for that purpose only. To determine whether this technology is useful or not, it is based on the capacity to reuse the experience in the other relevant industries or establish its replica if it's cost effective. The human resources available in the host country should be in a position to understand and adapt the technology. The transferred technology should also assist in developing the basic infrastructure of the host nations. Objective of MNC is to exploit the resources, but there is a growing demand of social responsibility from these institutions, apart from the technology transfer and FDI's. Establishment of charity trusts, educational institutions, old age homes etc are the extension of these responsibilities in the host country with or without using the advanced technology. Corporate Responsibility is defined by the World Business Council for Sustainable Development as the " ethical behavior of a company towards society". The corporate responsibility of MNC should be accompanied with the social responsibility improving the host social conditions not only by donations but also through firm actions of transferring useful technology as a long term measure (Vidya Hattangadi 2005).

Technical factors:

One of the prominent postulation of the TRIPS agreement is that intellectual property rights protection and enforcement will contribute to the dissemination and transfer of technology. It also stated that developed countries shall encourage institutions to transfer technology to the least developed nations. The stringent IP polices are reliable with the interrelationship in consideration with the other factors including the structure of factor supply, size of domestic markets, the degree of stability of the macroeconomic environment and productive infrastructure. As there are enough IP laws, the developed countries will be free to transfer technology. At the same time provided with the stringent patent, trademark, trade secrets the developing countries can focus on the indigenous technology development without infringement fear. These technical factors will help the host country to adapt technology and develop indigenous technology without infringement (UNCTAD-ICTSD Project 2003).

Political and Economic factors:

Political factors play a crucial role in transfer of technology from one country to other country. The developed nation allows its MNC’s to establish in the countries with ideal environment and bilateral agreements and even the host nations will have its own reservations in allowing MNC’s. There is a need for strong ties in allowing its defense and nuclear technology transfer. India makes lot of defense purchases from France and Russia and established joint ventures with them. The recent nuclear deal with US for nuclear technology and nuclear material benefited India to a large extant. Economic reforms like FDI policy, Industrial licensing, exchange control and taxation encouraged many MNC’s to establish in India. This has improved the healthy competition per capita income and even expected to reach 35 times by 2050. MNC’s are paying more to Indian staff than the other in the geographies due to their ability (Siliconindia 2008).

Environmental factors:

China and India are the biggest pharmaceutical exporters of the world. Both in India and China, there are lot of MNC’s established where research and development is done at host country. There is a strong criticism on the developed countries that, they choose these developing countries to make sure that their nation will not get any harm through the research on the medicines as there are chances of damage to the public health. Bhopal gas leakage incident is also a clear example of this sort. Apart from the negative aspects, the transferred technology in this industry placed these developing nations in top position. Improving in the general medical care of the country by providing equipment and facility investments and training health care workers by MNC’s is a welcoming step (Medcof and Chatoorgoon 2006). The technology transfer in agro-business will help to maintain self-sustainability in developing nations. Inducting biotechnological process and seeds produced desired results in most of the developing countries (Sankat et. al 2007).

Conclusion:

Technology transfer is the most important benefit through the MNC’s to the local countries, but there is no guarantee that it is automatic or free. This technology transfer is done only through spill over and not through transfer. Major FDI’s are received only in the low technology industries, where huge labor is required and few advanced technological inputs are sufficient. More transfer is done due to the presence of MNC’s allowing the local firms to know through the process of observation, induction of trained workers and improving competitive skills. There should be a balance between the transfer and absorptive capacity. Research and Development industries will have more access and chance to technological spillovers from FDI.

MNC’s should transfer the technology that suites to host nations and local government also should take proactive steps and take the suggestions of the analysts about its benefits to host nation before allowing FDIs and MNCs in a particular area. Transfer of technology should not be simply a copying process from the developed nations, but it requires adoption that recognizes the indigenous capabilities necessary to outfit home conditions.