Nature of Technology Transfer

Technology transfer is the movement or flow of technical knowledge, experience, data, information, designs, prototypes, materials, inventions, software, and trade secrets of a particular technology from one organization or country to another organization or country.

Mainly we can consider two ways of technology transfer. Vertical technology transfer and horizontal technology transfer. We will examine both these scenarios in Japanese automobile industry.

The Japanese automotive industry is one of the largest industries in the world. Japan has been in the top three of the countries with most cars manufactured since the 1960s, surpassing Germany. The automotive industry in Japan rapidly increased from the 1970s to the 1990s when it was oriented both for domestic use and worldwide export and in the 1980s and 1990s, overtook the U.S. as the production leader with up to 13 million cars per year manufactured and significant exports.

After the World War II, Japan needed to re-build its economy. Japan realized most effective approach to achieve recovery was through imported technologies. Then japan obtained most of its technologies from the USA and Europe. After that they innovated technologies and invented new technologies to automobile industry and came us as a world leading automobile manufacturer.

Unlike other developed nations, Japan is more inclined to transfer some of its most advanced technologies to developing countries.

Especially, in Thailand, Japanese technology transfer to the automobile industry has been playing an important role for the development of manufacturing industry. The Japanese production system, represented by Toyota production system, has contributed for achieving high skill based Japanese industries and is associated with the Japanese human resource development system. Japan is known for its extensive, firm-based training system.

The growth of the Japanese automobile industry in the 1980s was conspicuous for more than the speed of the increase in production volumes. The rapid expansion of overseas production and the integration of overseas operation into a global production network and the accompanying expansion of integrated global supply networks also attracted attention (Busser and Sadoi 2004). With the regards to the product architecture and organizational capabilities, automotive industry has characteristics of integral architecture and its technical innovation is relatively moderate but requires wide experience and coordination with other members and processes (Fujimoto 2003). Therefore, the expansion of the Japanese global production networks in Asian countries, especially NIEs and ASEAN, especially Thailand, Malaysia, Indonesia, Philippines, and Vietnam, were studied and evaluated the cases of technology transfer.

We can discuss the horizontal technology transfer scenario with the example of Hero Honda joint venture.

Hero MotoCorp is the World’s single largest two-wheeler motorcycle company. Honda Motor Company of Japan and the Hero Group entered a joint venture to setup Hero Honda Motors Limited in 1984.The joint venture between India's Hero Group and Honda Motor Company, Japan has not only created the world's single largest two wheeler company but also one of the most successful joint ventures worldwide.

During the 80s, Hero Honda became the first company in India to prove that it was possible to drive a vehicle without polluting the roads. The company introduced new generation motorcycles that set industry benchmarks for fuel thrift and low emission. Over 20 million Hero Honda two wheelers tread Indian roads today.

Here the Japan automobile industry transfer their technology to the India with the joint venture. They exchange their technologies, experiences, expertise, technical skills, and information about the automobile industry with India. And, with the educated, well skilled Indian engineers, technicians, and labor force they became the world’s largest two-wheeler company in early 2001.