Technology transfer: Challenges in Mongolia

Presenter:

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Mongolia is situated in Central Asia, between Russia and China, and population of our country is about 2.7 million. 98 percent of the total grown-ups are literate, but it is being critically short of high skilled professionals.

Until 1990, Mongolia was a socialist country with a fully centralized-planned economic system. In 1990, the socialist system was fell apart and the country started a transition to the democratic and free market economic system. Ever since, state-owned large enterprises and manufacturers were given out and changed their ownership status to private sector. Thus state aid and support for science and educational institutes were inadequately decreased. During the transition period of 1990-2007, science and technology projects were almost stopped up. Even now, there are some particular reasons for this:

- Private sector businesses are financially weak and in short of movable assets.
- Budgetary and non-budgetary finances are limited
- The country is in pre-industrialized phase
- Loan interest rate is high, size is small and term is short.
- Salaries for scientists and workers for science projects are very low.

- Business enterprises decreased their needs for scientific researches.

If we look at our country's Gross Domestic Product (GDP) structure for 2007, 27.5 percent is for mining and 20.6 percent is for agriculture, but processing industry is only 6.1 percent, electric, heating and water supply industry is about 2.5 percent, building construction is 2.2 percent only, and rest amount of 38.9 percent is for trading and service sector. This GDP structure shows that our country's industrial technology for processing raw materials is in low level and economic capability is weak.

Our country's export mainly consists of non-technology and low technology products. If we look at export products structure of Mongolia:

- Non-technology products – 44.93 percent
- Low technology products – 52.77 percent
- Partial low technology products – 1.5 percent
- Partial high technology products – 0.8 percent
- High technology products – 0 percent

From this statistics, we can say that major part or 95-98 percent of our country's export is non technology and low technology products. In other words, our country is mainly exporting raw materials which are generally not processed.

Main industries of Mongolia consist of a giant copper mining corporation, "Erdenet" which is one of the first five largest copper mining in the world, gold and coal mining, and livestock farming. But, as mentioned previously, only not processed and half-processed products and raw materials like copper, gold, coal and cashmere are exported from these industries.

In addition, our country has taken first steps to use some giant mineral deposits as “Oyu Tolgoi”, world’s 2nd largest copper-gold deposit and “Tavan Tolgoi”, world’s 5th largest coal deposit.

Why I mentioned all these here is because to make concern that Mongolia is in the road cross to choose to be a country which produces high-tech end products with its mining and agriculture raw materials by setting up an appropriate system for technology transfer or still to remain as a raw material exporting country as current.

There is an approach which is being popular presently that a country goes through 3 main phases of its historical development. From other side, according to this approach, we can say that all countries could be categorized into 3 consecutive levels of their development. They are:

1. Raw materials phase. Natural resources based economy.
2. Investment phase. Investment economy
3. Innovation phase. Knowledge based economy

As indicated by this approach, our country has completely natural resources based economy. Accordingly, in future, key strategy of development must be to increase investment and technology transfer.

Main advantages of our country are as following:

- Population has good basic education; and its age structure is relatively young.
- Located close to large consumer markets, between two big countries, Russia and China.

- An adequate amount of natural and mineral resources (copper, gold, coal and livestock)
- Broad and vast land is kept in its wild condition.

Main disadvantages of our country are as following:

- Weak infrastructure
- Short of high skilled and experienced professionals
- Lack of financial resources to fund itself
- Technology development and transfer are pathetic

The key of development of any country is to eliminate its disadvantages by effectively using its advantages. I think the key of the rapid development of Japan and Korea was large scale investment for their science and technology projects. I also believe that the main strategy for industrial development of these countries was technology transfer and its advancement. As this way, our country needs to increase its current relatively low science and technology capabilities by updating high education programs to comply with modern world science and technology requirements, improving activities of science research centers, building modern laboratories and training young professionals in high developed countries. By taking these steps, we will have possibilities to use technology research outputs and innovations in industries, and technology transfer will initiate building knowledge based economy which encourages whole society.

For latest years, our government has paying great attention to develop national innovation system and approved a plan, “Master plan for developing science and technology of Mongolia, 2007-2020” by Government decree number 2 of 2007. Also our parliament passed a strategy, “Comprehensive Strategy of

National Development which is based on Millennium Development Goal of Mongolia" by its Decree number 12 of 2008. These policies have declared that our country will build self-supporting economy by increasing its financial capabilities with mining industry development and the country will be shifted to knowledge based economy eventually.

Our country has been faced following challenges for technology transfer. These are:

- Improving high education quality
- Encouraging activities of science institutes and increasing its capabilities
- Using and advancing foreign high technologies and know-how in Mongolian condition
- Developing the duo, "Science institute-Industry"
- Establishing technology funds
- Creating an affordable system for implementing technology transfer in real life.

Thank you for your attention.

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