

**I**n the article "The Impact of Imported Technology on Economic Development" on Economic Development Review, No 12, August, 1995, I put forward the concept of imported technology and its identification. In this article, I would like to present criteria so as to evaluate the level of imported technology.

This is a large field full of pressures and challenges to current development of our country in general and HCMC in particular. The technological factor in the course of industrialization, modernization is extremely important. Technology turns out many commodities and products for the society, generates the competing power, changes quantity and quality of the process of economic development.

In our country the current research and development are limited due to many reasons, therefore perhaps technological development still depends upon imported technology in the coming decades.

The market economy really intensifies our country's development, this is a common trend of all the world today. The State's open policy made a turning point in industrial development.

Vietnam became a market luring foreign investors, the flow of foreign investment increasingly pours into Vietnam. Up to June 1995, there are 1,400 licenced projects with total capital of over US\$15 billion in Vietnam. HCMC alone accounted for one third of total issued licences with registered capital of US\$5 billion (one third of total investment capital all over the country). The increase in foreign investment results in the fact that foreign technology was strongly imported in our country. It is sad to know that SCCI has recently hired a Swiss company named Société Général de Surveillance (SGS) to evaluate the im-

port of equipment and materials as capital contribution to 12 foreign invested joint-ventures currently operational in Vietnam and SGS concluded that six of the 12 inspected companies had overvalued their imported equipment by US\$14 million. If the whole 1,400 joint-ventures are inspected, the loss could be terrible. Moreover, all technological lines contributed to joint-ventures are obsolescent, especially

there are refurbished lines in such companies as VN Motor Corporation, Saigon Vewong, BGI-Tiên Giang.

How can we discover the overvaluation and what can we depend on to evaluate technological lines as soon as they are imported in Vietnam? In fact, this is an extremely difficult task which requires specialized staff to work skillfully, diligently, honestly and devote themselves to their task. In addition they also obtain

updated data, figures and information in the world so as to identify the original producer of goods, technology and their prices.

This did not yet mention the unified management and close coordination between authorized departments, branches and localities in evaluation.

I hereafter set forth a series of criteria with the aim to give information about evaluating the level of imported technology. They are personal opinions with a view to helping perfect the system of criteria to evaluate the level of imported technology and presenting conditions which can be reasonably applied in our country initially and in the next decades.

#### 1. TECHNOLOGICAL LEVEL BASED ON PRODUCTION FACTOR

##### 1. As for machinery and equipment

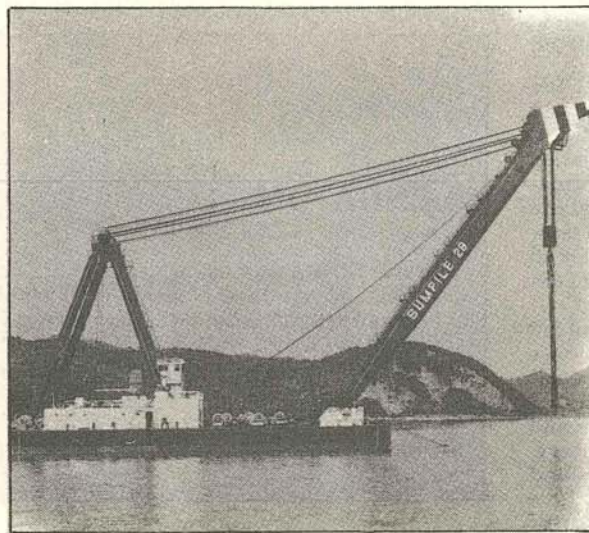
a. Tangible depreciation: Characterizing the wearing out of machinery and equipment due to physical impact of nature and using process. In technical aspect, this norm is determined by the ratio of the total depreciation of major parts in the equipment over their total value. In economic aspect, this norm is attached with the amortization level of equipment (the value of fixed asset) which is defined by time or the number of products.

b. Intangible depreciation: Expressing the backwardness of technological generation due to rapid development of technological revolutionary and the demand for innovation of equipment, that is, the remaining value (even 100%) of the equipment which is disposed of in production because it does not meet the quality of products, market prices or environment...

c. Coefficient of equipment innovation: Symbolizing the technical progress in each period (commonly each year and according to the speed of technical progress in each

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by MEcon. NGUYỄN QUỐC TÒNG





country).

d. Ratio of equipment directly used in production: It is calculated by total value of equipment used for production over total value of existing equipment. This norm shows the efficiency of using equipment.

e. Ratio of modern equipment: Expressing the modernity of equipment in production which is calculated by total value of modern equipment over total value of operational equipment.

f. Level of providing energy for labor: showing the level of providing equipment for a worker.

## 2. Level of technology

a. Ratio of products made by new technology: Reflecting the efficiency of using new technology.

b. Ratio of products made by lines: characterizing the continuity, level of specialization in production.

c. Level of mechanization and automation

## 3. Production costs

a. Costs of energy for an unit of product.

b. Costs of raw materials for an unit of product.

## II. TECHNOLOGICAL LEVEL BASED ON PRODUCT QUALITY

a. Ratio of exports: expressing the level of international technology concerning product quality through footholds gained in the world market, or the ratio of products registered up to ISO.

b. Ratio of products registered up to national standard

## III. TECHNOLOGICAL LEVEL BASED ON LEVEL OF PRODUCTIVE ORGANIZATION AND SPECIALIZATION

- Level of specialization

- Level of organization and management

- Level of training staff

- Environment of production

## IV. TECHNOLOGICAL LEVEL BASED ON EFFICIENCY OF PRODUCTION

- Productivity of labor  
- Economic efficiency

resulted from application of technical progress

- Increasing income, earned profits

- Time of retrieving capital

The system of above mentioned norms shows the norms evaluating technological level are diverse and numerous. These are common norms for economic sectors. In specific sector, there should be more concrete and detailed regulations bearing specialized features of each sector. However in order to use these norms in evaluation of technological level, we should base these norms on the following as-

tures) and recently a report of HCMC Service of Technology revealed 70% of total equipment imported from 1988 to now was obsolescent. However, there are a lot of arguments over technical level of imported technology, the problem is they are backward overseas but new in our country. It is important to consider series of imported technology in the past years (not mentioning losses to our industry due to lack of information and capability or being in cahoots) still fit our productive environment although they are out of date and they still made exports and

kinds of equipment. technology are allowed to import, operate, innovate in current condition? Therefore we should immediately formulate and unify the system of norms evaluating technological level of imported equipment. These above mentioned norms can be completely consulted to put them in the national system.

- Data base: Through investigation, collection, we can easily see the process of evaluating level of imported technology is hindered because the inspected system of figures is subjective and and it's hard to undertake reverse evaluation and have global information network, so we lack information about foreign partners. We should gain information about technology we need importing and data concerning foreign partners so as to reduce losses and get equal in the negotiation of buying equipment or forming joint-venture.

In short it's high time we should have the process of evaluating imported technology strictly based on national uniform criteria and detailed regulations for specialized sectors. Only by doing so can we bring effects of imported technology into play for our economic development; on the other hand technology made by ourselves should be improved according to the motto "imported technology along with Vietnamese intelligence will create a backbone for the country's sustainable development". The market economy gives HCMC many opportunities to develop rapidly, however foreign companies never offer us modern lines of equipment. Their investment targets are obvious: trade and profits. Thus they will force us to our cost, if we do not draw experiences from other countries. We can completely prevent mistakes and risks of other countries. This depends upon our knowledge and skill ■



pects:

- Legal base: At present in State management, there is not yet a system of norms, criteria to evaluate technological level of imported technology uniformly. In reality, the Ministry of Science, Technology and Environment issued scattered legal documents and assign some authorized agencies to implement them, so there are many legal cracks and opposite opinions (for example it is not strict to allow importing equipment of 20% depreciation). The process of importing technology has learned many bitter lessons (as mentioned above in joint-ven-

diversify commodities, create a lot of jobs... Thus, In order to prevent becoming a dustbin for obsolescent technology and raise economic efficiency, we should take deliberation based on many factors, not simply on its backwardness or modernity. The problem, in the last analysis, is still economic efficiency (certainly we cannot accept efficiency at any cost which can cause environmental pollution).

- General norms: I initially gathered about 20 norms concerning technological level on the whole and imported technology in particular. The issue should be settled: What