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Workshop on Creation and Transfer
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TYPES AND CONDITION OF TECHNICAL CO-OPERATION ✓

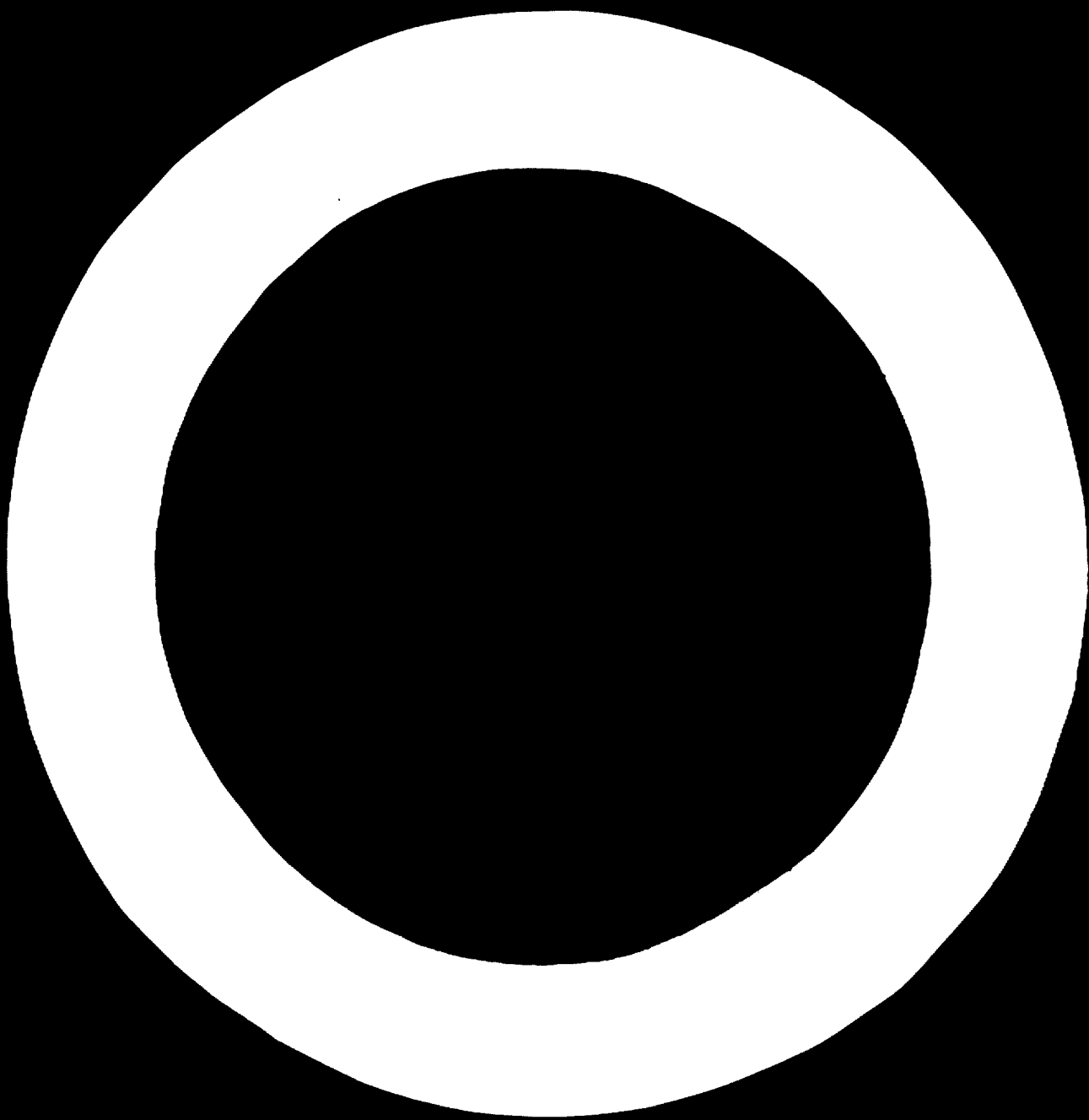
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In this presentation I would like to cover these subject; first, Economic and technical cooperation; second, Definition of "know-how" in technical cooperation; third, Understanding of "know-how"; fourth, Prerequisite for transferring "know-how"; fifth, "Know-how" fee; sixth, From enquiry to conclusion of technical cooperation agreement; seventh, What is expected of developing countries from the viewpoint of technical cooperation; last, Conclusion.

I. Economic and technical cooperation

- (1) The economic cooperation between developed and developing countries has hitherto been made centering around "financial aid" and "merchandise export". In this case, the longest possible term of a loan was given at the lowest possible interests rate, and the merchandise included capital goods.

I feel doubt, however, if these loans and sales of merchandise have made a great contribution toward the economic growth of developing countries; besides, "financial aid" and "merchandise supply" have their limitations for both the donors and recipients.

Needless to say, technique is indispensable when articles are produced by systematizing and controlling men, money and material.

Especially in the case of steelmaking industry, its establishment and expansion will exercise a great influence on other industries, as it constitutes the basic industry of the country concerned. This is the reason why the interchange of not only "money" and "things" but also "technique" is requested.

It is this technical interchange that will foster and strengthen the man-power in the country concerned and will make economic cooperation more efficient.

- (2) As you are aware, Japan is a small country, lacking extremely in natural resources and, what is, worse, has a huge number of population. In spite of this unfavorable economic environment, Japan is drawing the world's attention in the various fields. A remarkable progress is especially seen in the steelmaking industry. In post-war days, Japan produced only about 500,000 tons of crude steel, while in 1970 it put out as much as 90,000,000 tons. What has brought this increase of production? There may be several factors for that, but the greatest one may be this:

After the war, Japan made every effort untiringly to improve its steelmaking technique, learned the best techniques in foreign countries and improved and developed them, and also conducted researches in the new fields, and thus, accelerated the development of new techniques. This all contributed to the remarkable progress of the steelmaking industry in Japan.

As the steelmaking technique of Japan has come to be evaluated highly in foreign countries, an increasing demand for it is coming from abroad one after another. Coupled with the Government's encouragement of technical export, Japan is now emerging from the importing country of technique into the exporting country. Japanese industries including steelmaking have so far exported their techniques chiefly to the Asian region, but now the export is spreading to European countries and the United States.

- (3) In developing countries, technique usually takes roots after going through the following steps: Use of a product, repairing, production, planning, and research and investigation. This way of acquiring technique is quite contrary to what developed countries follow to do.

Technique takes roots only when it is suitable for the area concerned and when it is introduced in a way fit for that area. In so doing, it is necessary to take into consideration each of such factors as social, economic, political and technical. Consideration must also be given to the following two factors respectively, one is the demand factor that pulls up the technique and the other is the ability that pushes it up.

In this case, it needs to grasp accurately in each area as to what kinds of demand factors have appeared and in what way, and also what difference there is in the degree of importance between such factors. In studying the ability factor, it is necessary to take into account not only the existence of the technical potential, which enables to digest the technique in question in the area, but also the assistance factor that the whole society has for the technique, for example, the manners and customs, natural resources, economic condition, policies, etc.

In short, the demand factor for technique and the ability to use it are great, there will be so much possibility for the technique to take roots and develop in that area.

II. Definition of "know-how" in technical cooperation

In the past Japanese thought it necessary to keep "know-how" in secret and were not inclined to disclose it. This might be due to the traditional thought from the sword makers in ancient times. But today every excellent product must be exported to as many countries as possible so that technical interchange can be achieved throughout the world in order to uplift each other's level of technique.

In speaking of technical interchange, however, we have to bear in mind that such "know-how" has resulted from the systematic

and scientific techniques which were built up by our seniors through their continuous efforts. And "know-how", therefore, has its own value, and is thought the valuable property of its possessor. It is not permissible to infringe the property which others have obtained before using such "know-how". The "know-how", which is respected in a certain country must be respected by other countries as well. If not, the export of "know-how" will be hampered, and in consequence, the technical interchange between countries will not be realized.

~ III. Understanding of "know-how"

1. "Know-how" must have the following three characteristics:

- (1) It must be useful for industrial purposes and must bring a profit.
- (2) It must not be easily contrived. If not, it is worthless. Hence, its secret must be kept.
- (3) It must be a technical product resulted from many years' experience.

2. I would like to point out the difference between "know-how" and "patent", as we often receive enquiries for technical cooperation without distinguishing between the two and with causing unnecessary confusion.

These two words were derived from the same source. In case of a patent, its secret can be opened to the public as it is definitely protected by law, while "know-how" must be kept in secret as it is not protected by law, and hence, self-protection must be made by contract. We must pay our attention to these two points concerning "know-how".

IV. Prerequisite for transferring "know-how"

As payment must be made for the disclosure of "know-how", careful studies must be made at the outset of concluding a contract so as to fix the scope to be disclosed.

The following ways and means will be used for disclosing "know-how".

- (1) Drawings and data
- (2) Consulting service
- (3) Training of recipient's employees at the "know-how" donor's works
- (4) Dispatch of donor's engineers to recipient's works

V. "Know-how" fee

1. As mentioned earlier, "know-how" is a property itself and has the character of producing a profit. Hence, the recipient must pay a reasonable fee. This payment may be made in the following manners:

- (1) Initial payment
- (2) Royalty
- (3) Fee for drawings and data
- (4) Expenses for dispatching engineers

There may be a special case when the fee is converted into investment.

2. The calculation of fee is made on the case-by-case basis, but generally speaking, it is far cheaper and far more profitable to acquire necessary "know-how" by paying its fee, namely, the price of knowledge, than to engage oneself in researching and developing the "know-how".

VI. From enquiry to conclusion of technical cooperation agreement

Nippon Steel Corporation established its technical export division

about ten years ago, which controls exclusively the engineering consultancy, and has rich experience in this line of business. The clients, who are asking for its cooperation, are scattered throughout the world. What I am going to talk about is based chiefly on the experience of Nippon Steel Corporation.

1. Technical cooperation enquiries from developing countries come through the following main routes:
 - (1) Through official organizations
 - (2) Directly
 - (3) Through Japanese trading companies, etc.
2. When an enquiry comes, detailed investigations are made on the contents of the project in question and then, the field survey is made when occasion demands. After these procedures, decision will be made as to whether or not the project should be taken up.
3. Technical cooperation can roughly be classified into the following types (case-studies):
 - (1) Feasibility study (In 1965 JCI and its cooperators dispatched a survey mission to India on low alloy steel, and submitted its survey report.)
 - (2) From engineering and construction of plant to operation guidance (For Pohang Iron & Steel Co., Korea)
 - (3) Planning and engineering of construction only
(For Tin Plate Company, India)
 - (4) Survey and study of existing equipment
(For C. S. N., Brazil; C. A. P., Chile)
 - (5) Technical services in the case of joint venture
(For USIMINAS, Brazil; for Malayawata, Malaysia; for S. S. S., Sudan; and for FUMIRA, Indonesia)

4. Technical cooperation is usually made within the following range. As to whether cooperation is given covering the whole or part of it is decided on by consulting with the client concerned.

(1) Feasibility study

(2) Planning and designing of plants

a. Preparation of layout

b. Preparation of specification and data

c. Evaluation and recommendation on quotations from bidders

d. Others

(3) Supervision and advice on construction

(4) Operation guidance

a. Education and training of recipient's employees at donor's works

b. Dispatch of donor's engineers to the client's country for training of employees

5. When both parties come to an agreement, the following matters may be added to the technical cooperation:

(1) Granting of licenses

(2) Equity participation

(3) Supply of equipment

(4) Development of raw material sources

6. Items of technical cooperation

Covering each of the steelmaking processes, the following things will be conducted according to an agreement: engineering, maintenance of the equipment, operation method, process and control as well as quality control of the product. Some special products will be entrusted to sister companies.

VII. What is expected of developing countries from the viewpoint of technical cooperation

The following are what I would like to point out from our own experience:

1. **Steelmaking industry being the basic industry, it is essential to foster allied industries as well. This requires a huge amount of money, and must be backed up and protected entirely by the Government.**
2. **A reliable cooperator must be selected.**
3. **It is advisable to ask for the guidance of both engineering and operation. Those who conducted engineering are most thoroughly acquainted with the planning and the equipment concerned. Hence, it is recommendable to have them give operation guidance.**

Unlike engineering consulting enterprises in Europe and the United States, Japan's steelmakers can carry on both operation and engineering. This is a distinguished feature of Japanese steelmakers.

4. **The coordination of each branch is required especially in the steelmaking industry. Whatever excellent technique individuals have, such techniques would remain useless unless they are systematized into the whole. The techniques attained by individuals must be improved and integrated into the whole so that these techniques can display their true value.**

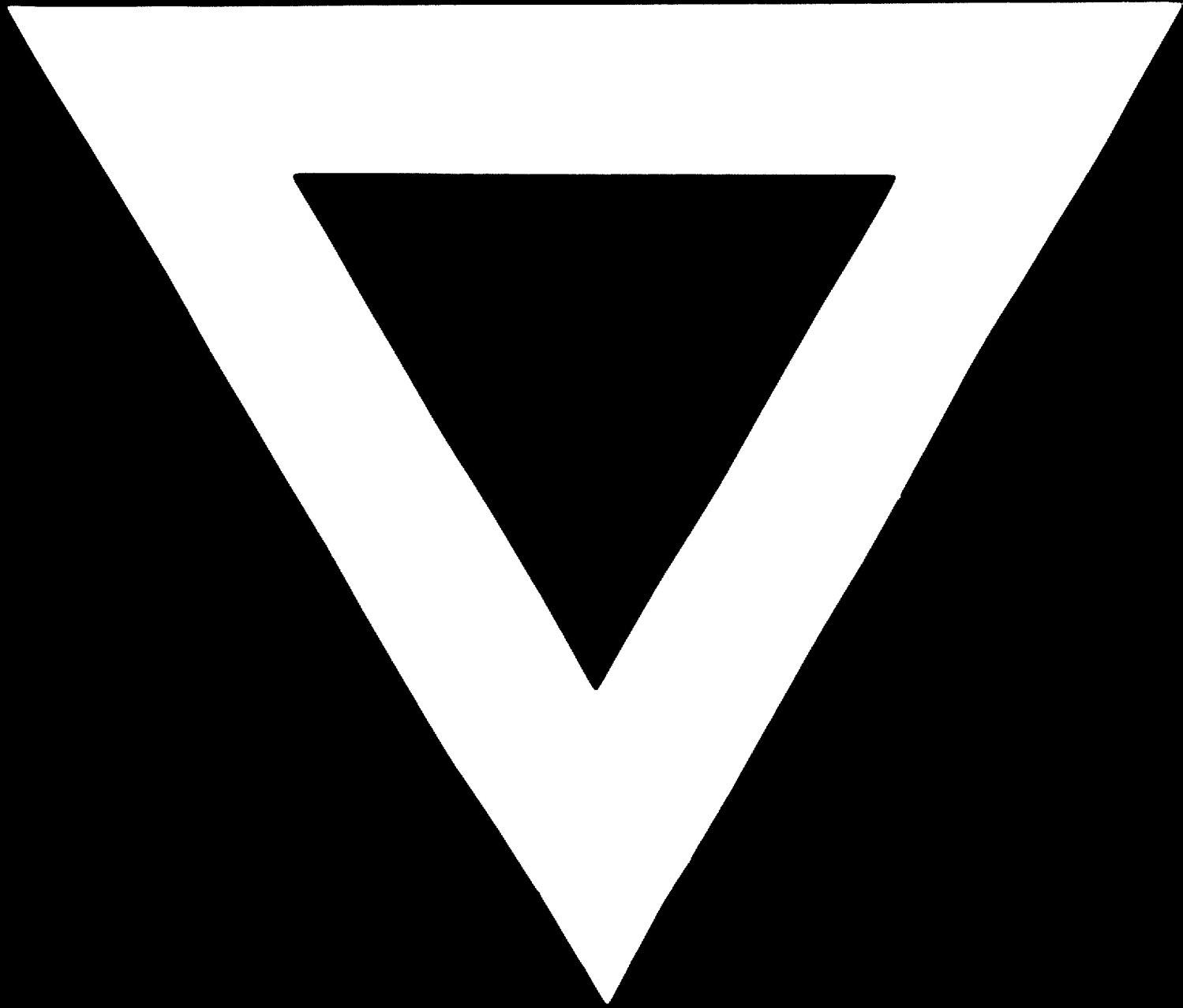
VIII. Conclusion

Technical cooperation is nothing but the interchange of brains (or knowledge), in which men play an important part as a medium. Unlike loans and sales of merchandise, therefore, there are many complicated and undeveloped fields. It may be true that different

languages, laws, manners and customs, etc. are working as a great hindrance.

As long as technical cooperat'ion will strengthen the economic basis of the countries concerned and if technique itself has unlimited possibility of development, international interchange of techniques must be pushed on further by overcoming those difficulties and on the basis of friendship and reliance.





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