

Bolz, Klaus; Plötz, Peter

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## Technology- and Marketing-Transfer by Tripartite Cooperation

by Dr Klaus Bolz and Dr Peter Plötz, Hamburg \*

**The following article is an excerpt from a study written by the authors on behalf of the UNCTAD<sup>1</sup>. It is based on conversations with firms which are engaged or interested in tripartite cooperation and with various private and public organisations in the Federal Republic of Germany.**

**T**he development aid provided by the western industrialized countries in the past 20 to 25 years — mostly as capital aid — has yielded rather meagre results for the economic progress of the large number of countries concerned. As it is realized that in the particular situation in the developing countries capital aid by itself is not an adequate means of setting dynamic self-acting development processes in motion in the individual countries of the Third World, more differentiated concepts are under discussion and in use today which are adapted better to the complex economic, sociological and political conditions in the developing countries. Combined use of capital aid, educational assistance, trade preferences and help with know-how (technology transfer) is expected to give better results than have been achieved in the past.

### Dualism in Technology

The following discussion is not concerned with the basic question whether technology transfer is a suitable means of promoting economic growth processes also in developing countries; a positive correlation between technology transfer and economic growth is taken for granted. The only question to be considered is how the technology transfer is to be effected so as to achieve the optimum of growth effects. For modern industrial economies it may be assumed that the effects of technology transfers depend to a limited extent only upon the diverse methods of technology exchange. The situation is however fundamentally different in regard to technology transfer to low-productivity countries because their technologies are held back by tradition and lack effective dynamic elements.

The technological dualism between the industrialized and developing countries is enhanced con-

stantly by the fast perfection of the technology of the industrialized countries which carries them farther and farther away from the conditions prevailing in the Third World<sup>2</sup>. As a result it becomes increasingly difficult for the developing countries to adopt modern technologies.

To what extent developments in the Third World will benefit from modern technologies will probably depend above all upon the channels through which these technologies reach the developing countries; for these channels certainly determine in part to what degree the technologies can become effective. It has to be noted that technology transfer cannot be a simple acceptance of technology but requires a modification of technology as a prerequisite to its assimilation if enduring development results are to ensue from it.

### Technology Transfer and Tripartite Cooperation

The following remarks serve the purpose of clarifying the question to what extent industrial tripartite cooperation can be used as a successful means of technology transfer. The few cases of tripartite cooperation put into practice up to now mostly concern plant construction projects of the traditional kind and do not allow this question to be answered on the strength of practical experience alone. Our remarks are therefore based on conversations with firms which are engaged or interested in tripartite cooperation and with various private and public organisations in the Federal Republic of Germany.

\* HWWA-Institut für Wirtschaftsforschung-Hamburg.

<sup>1</sup> Report on Industrial Cooperation Relations between the Federal Republic of Germany, the Socialist Countries of Eastern Europe and the Developing Countries, Hamburg 1975.

<sup>2</sup> For further details see M. Rasul S c h a m s , Technologietransfer als Instrument der Entwicklungspolitik (Technology Transfer as a Tool of Development Policy), in: Technologietransfer — Ausgewählte Beiträge (Technology Transfer — Selected Contributions), HWWA-Report No. 20, Hamburg 1973.

In as far as the known instances of tripartite co-operation differ from the previously customary production plant contracts only in that the developing country places a turnkey order for an industrial plant with several firms in the West and East together instead of giving it to one firm in the West or East, no particular technology transfer effects are to be expected from them. Their value as a means of providing instruction for the developing country will be small as local enterprises are largely or wholly excluded from the actual work on the contract. The technology transfer involved in the construction of the plant will have no very far-reaching effects on the general technological situation in the developing country. That firms from the East and West are participating in this so-called tripartite cooperation at the same time cannot be expected to yield any special technology transfer effects. On the contrary, the developing country will probably fare worse than it would with a single partner from the East or West because the partners from the East and West will try to keep one another from delving into their respective technologies.

That direct investments without the participation of the developing country bring about a transfer of technology as well as planning and management techniques is undeniable. But it is also clear that as a rule the developing country cannot expect much help for the development of its economy in general from such investments. The direct investment will often be no more than an outside branch factory of a firm in a capitalist or socialist country, and the investor will have no special ambitions of value for the development policy of the country concerned. Its management will — certainly in the case of western multinationals — be largely in the hands of the parent, and the developing country will only be able to exercise its own influence in the legislative framework. In regard to the technology transfer discussed here this is unlikely to be of much importance, the more so as such direct investments usually involve capital-intensive technologies.

The technology transfer is unlikely to have significantly more favourable effects if the direct investment is made jointly by a western firm and a socialist enterprise unless many such East-West cooperations are effected in the production sector, which is not very likely. In these cases the scope of the technological effects will also be limited by the pursuit of objectives specific to the particular enterprise.

### **Advantages of Joint Ventures**

On the other hand it is certainly possible to avoid major drawbacks if the developing country participates in the projects, provided that it takes care

at the same time that the western and socialist partners retain the advantages accruing from co-operation. The developing country will have to convince the other two partners that it will not be contrary to the purpose of the joint cooperation project if a process spreading certain technologies throughout the country is sparked off. Under purely technological aspects it will probably be irrelevant to the economic-technological advancement of the developing country whether it engages in joint ventures with partners from the East or West alone or by way of tripartite industrial cooperation. In individual cases joint ventures with partners from different social and economic systems may involve difficulties in the diffusion of transferred technologies because the adjustment procedures are duplicated.

Basically there are several technological benefits which the developing country may hope to derive from tripartite cooperation. In the first place, this form of cooperation provides an opportunity to participate in the selection of the technology to be used; more consideration can for instance be given, up to a point, to the labour market situation and the general technological conditions in the developing country, and the use of capital-intensive technologies which are difficult to assimilate could be reduced to a reasonable level. Secondly, the developing country benefits in as much as local enterprises can be given a share in the erection of new plants and profit from the engineering of the foreign partners. Thirdly, training can be provided for qualified operatives and possibly also for senior staffs. Fourthly, the links of the new enterprise with local suppliers of input products can be turned to advantage for the technological fertilization of preceding production stages, and this need not be to the exclusive advantage of the new joint enterprise. Fifthly, local firms operating in related fields may likewise derive technological advantages.

In this and other ways cooperation in new enterprises by the developing country provides an opportunity to exercise a favourable influence on the diffusion of technologies which are brought into the country from outside. As a rule there will be less scope for technology transfers — and thus for spreading new technologies — in these instances because the cooperation between German and East European firms will not at first often take the form of joint ventures but be of a less close kind (not involving capital participation). The technology transfer, it must be finally pointed out, will depend essentially upon the particular object of the cooperation: Scientific-technical co-operation for instance is different from production or marketing cooperation and consequently offers further openings for technology diffusion.

### Joint Research and Development

We have not learnt of any instances of joint research and development in connection with tripartite industrial cooperation in which German firms were or are concerned nor do we consider tripartite cooperation with joint research and development as its object to be practicable in the foreseeable future. The experience with the German-East European scientific-technical cooperation agreements shows that this form of cooperation is liable to be greatly hampered by considerable problems in practice. The disparity in technological development between developing countries and their potential partners among the industrialized countries in the East and West is likely to aggravate these problems considerably. For this reason German firms will hardly ever be willing to enter into such cooperation arrangements.

There exist better chances for joint research and development to go hand in hand with other kinds of cooperation (e.g. in production). Research and development with the participation of the developing country would seem to be a reasonable proposition during the preparatory stage of tripartite industrial cooperation and also, and especially, later for the purpose of improving production, procurement, marketing and management techniques for projects at the operating stage where consideration is to be given in the arrangements for the various operational functions to the particular conditions in the developing country.

### Marketing-Transfer

As UNCTAD in its paper TD/B/490/Supp. 1 has already dealt in greater detail with marketing questions connected with tripartite industrial cooperation, we can confine ourselves to a few brief notes on the present state of development of tripartite cooperation from the German point of view.

UNCTAD took an optimistic view of the advantages in regard to marketing, especially for the developing countries. It probably did so only because tripartite cooperation was expected to lead to many joint ventures and it was moreover thought likely that the two partners of the developing country — and more particularly the one from western industrialized countries — would give a high rating to development objectives proper. Our observations have shown that — at least as seen from the German point of view — this is by no means the case.

As far as the German partner in plant construction deals is concerned, the scope for offers of significant marketing advantages to the developing country is extremely limited. At best it may

be expected that the socialist copartner will guarantee a market for goods produced in the new plant. Instances of this happening are known. But if the German partner were to give similar guarantees and provide marketing facilities, he would have to interest himself in markets which have nothing to do with his own business. This means in effect that tripartite cooperation in plant construction as practised hitherto cannot give the developing country any significant marketing advantages.

So far it has been the primary aim of the German partner in these deals to advance his sales; other "commitments" are accepted only as a "necessary evil". Even assuming that joint enterprises for production of finished industrial goods were to be set up in the foreseeable future, it would in such cases probably be the principal aim of the German partner to open up or enlarge a market for himself in the developing countries and the participating CMEA states. It is not normally to be expected that the production will be for the German domestic market, as is shown for instance by the attitude of the multinational groups which are currently attracting a great deal of attention.

None of the marketing advantages for the developing country mentioned in the UNCTAD paper are likely to materialize unless the German partner is willing — and import regulations permit him — to make use of the tripartite cooperation for moving his entire production of certain goods to the developing country. Were this to happen, the developing country could indeed enjoy all the advantages of having the use of an existing marketing apparatus, diversifying its export trade, etc. But at present we are still far from such a division of tasks between groups of countries at different stages of development in regard to the production of certain categories of goods.

Where tripartite cooperation is not entirely due to the wish for more sales but to other important objectives such as safeguarding raw and primary material supplies there is a greater probability of the developing country being able to profit from the German partner's marketing know-how and apparatus. In such cases it would be impossible however to exclude all cyclical risks.

Appropriate national and international policies will have to be pursued to prepare a new global concept of the international division of labour if the advantages mentioned in the UNCTAD paper are to be secured. The present pointers to such policies and the current state of tripartite cooperation do not however justify any great hopes. Moreover, it must be assumed that policies of this kind would probably be incompatible with the development policy concepts of the socialist countries.