

TRANSFER OF TECHNOLOGY—ITS RELEVANCE IN LESS
DEVELOPED COUNTRIES WITH SPECIAL
REFERENCE TO INDIA

by

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THE question of technology-transfer from developed to developing countries is one of the leading issues that are gaining momentum day by day in the third world countries. With the arrival of the New International Economic Order and as a *sine-qua-non* of the famous north-south debate, technology has been assumed greater importance. Whether a modern technology is permissible to be introduced in a primary producing country is a pretty old tale. Nevertheless, during the prolonged post-war period, it has been found that even the poorer nations are getting into multinational economic development.

It is to be noted that modern technology finds fertile fields in transnationals. The case of India can be cited in this context. HMT is helping Algeria to develop a machine tools industry. IRCON is building up giant railway network in Iraq, exporting railway construction technology worth Rs. 2,240 million. Some companies have set up plants in Yugoslavia, Libya, Nigeria, Mauritius, Singapore, Tanzania and Kuwait. Usually the products are engineering goods, detergents, soft drinks and the like. Besides this, India is showing muscle in some invisible items also like exports' services. In fine, it goes beyond question that many LDCs are displaying goods records in sharing the technologies with developed nations. It is not surprising that 'Begger my neighbour' policy holds good on a new dimension as the advanced developing nations are creating a fresh north-south debate thanks to their greater accessibility to modern technologies from distant north and west.

Thus, it is almost a proven fact that, nobody, no nation, no government can ignore the impact of modern technology. If technology, as a concept be structural, its successful implementation to a greater extent needs appropriate institutional ingenuity. Successful implementation of a modern technology is one thing and the proper distribution of its fruits among the people with desired parity is another. Today, in India, 60% of the rural souls are paupers, 30% of the city dwellers live on footpaths

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and slums. No doubt, the government studies also reveal the fact that the standard of living of the common people is declining day by day. Nonetheless, it is hasty to conclude that it is the introduction of modern technology which is to be blamed for such consequences.

Discriminating growth and more and more application of modern technology is a familiar feature in Brazil also. For ten years, "Brazilian miracle" achieved 10% increase in G.N.P. But nearly 40% of the country's wealth is owned by not more than 5 million people while 90 million of Brazilians have not gained anything from this miracle.¹ The following table will show the situation more clearly. It is to be noted here that imported technology has found a massive field in Brazil like Argentina.

Table : 1

Population	1960 (%)	1970 (%)	1976 (%)
Poorest layers of the population (50%)	17.7	14.9	11.8
Next income group (30%)	27.9	22.8	21.2
Wealthy layers of the population (15%)	26.7	27.4	28.0
The most wealthy income group (5%)	27.7	34.9	39.0

Source : *Le Monde diplomatique*, January, 1979, p. 14.

It can't be denied that during past thirty years, in India, people's share in infra structure or social overhead capital increased steadily and it is this tertiary sector where absorption of imported technology is quite remarkable. More and more success in this domain will make the climate proper to foster industrial growth and economic prosperity. India's success on the food front also cannot be treated independent of the impact of modern technological question.

"With limited natural resources and narrow domestic markets internationalism has long been synonymous with survival for a race such as Hongkong, Singapore, Taiwan and South Korea."² Similarly with profuse natural resources and wide domestic markets a good number are switching from basic trading groves to more complex production based economies. India is no doubt one such nation. South Korea, Brazil, India, Argentina, Mexico are some of the leading third world countries that are involved in the multinational development chiefly depending upon modern imported technologies. In most of the cases the fields of exercises are petroleum, industrial equipment, mining, metal refining steel and so on.

Whether the modern technology is worth adopting is not so important at the present moment as is the question of ruthless transplantation. The question that is being faced greatly by a number of developing countries

is whether the indiscriminate transplantation of equipment and technology from the most advanced nations can lead to a real economic growth. This is simply because accelerated capital formation and the maximum employment are the two basic criteria that are leading to the fundamental dichotomy regarding technological issue. In India, the sharp differences between the total protagonists of cottage industries and modern ones is an indication that the problem is being felt. Modern industry may be powerful enough to knock out the traditional sector and yet powerless to rebuild it. It is not a mere theoretical possibility nor it is the exceptional experience of a particular nation in the mid-twentieth century.

Here Dr. Sen's choice of technique is undoubtedly a major contribution to the theoretical analysis of capital intensive technology in a labour surplus economy, though it seems too hard to prove that empirically a maximum rate of savings-cum-productivity will sufficiently reduce unemployment in the long run particularly in the areas where institutional loop holes and colonial are present.

In any society, in order to conduct a theoretical framework regarding application of technologies, it is required to be clear about objective goal and subjective constraints. Here comes the justification of Napoleon's paradoxical remark: "Dress me slowly, I am in hurry". For a developing nation it is urgent to carry out the faster development programmes, so that the country may get a steady upward push. It is also equally essential to be cool, calm and calculating in its pursuit so that the country may not suffer from occasional hazards.

A planning decision requires three types of data: (a) the objective, (b) the technological possibilities with special importances of resource availabilities and (c) the feasibility constraints representing political and other non-technological barriers to the utilization of technological possibilities. Dr. Sen correctly held that "the economists are by and large more interested to deal with the first two than on-going into the thorny field of feasibility constraints."⁸

In most of the cases the problem of technology arises with complex economic consequences due to the ill functioning of the feasibility constraints, where the task goes beyond the control of the professional economists and finally rests upon the political administrators and bureaucratic policy makers. It is evident that the acquisition of technical innovations and the way of its utilization should be determined by bodies with due consideration of a variety of natural, material, financial, demographic, social and other factors. A country will only be able to benefit from additional technologies if it can absorb what it has already received.

The country should provide the welcoming structure which can connect new technologies.

Some economists of the developing countries view that the difficulties that are originating from the turn-key contracts pursued by the donor nations are causes of the economic disruption. In his famous article on "Technological transfers, regional operation and Multinational Firm.", Professor D. Germidis concludes that, "at the present time, technology transfer leads to substantial increase in the external indebtedness of LDCs which is already quite large and to a worsening of their economic position." This is evident more in countries of the Fourth world, like Haiti, Bangladesh, Laos, which have very non-diversified trade structure. It has been estimated that losses resulting from the introduction of modern technology will have increased by 6 times between 1968 and 1980 will amount to 9 billion dollars.

As things stand today, after such prolonged industrial rejuvenation and economic regeneration modern & sophisticated technology has appeared in India through a continuing process, and in this direction foreign investments were viewed as the prime vehicles of this transfer of technology. Strategically, at the present moment, some transnational units are facing hard days. Some policies of the government are standing as major hurdles. Outflow of national income-cum-capital is causing concern. Yet, it is equally true that inflow of foreign capital and technology finds some other government channels. Massive military expenditure, financing different scientific researches (e.g Atomic Energy Commission institutes relating satellite technology etc.) need careful and rational evaluation where continuous inflow of imported technology takes place. Before studying the need of sharing technology we will have to be aware of our respective strengths and weaknesses. We have to recognise the two opposite truths : (a) India has industries in virtually all areas of modern technology from fertiliser manufacture to nuclear power generation and (b) feasibility constraints caused mainly by adverse socio-political climate are undermining the entire process of economic growth slowly but inevitably.

References

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