Technology in UNCTAD: 1970 to 1984

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Changes in the World Context Since 1970

Fifteen years ago, technology policies were not a subject of special consideration either at the governmental — both national and international — or at the academic level. The position has now radically changed. UNCTAD has contributed significantly in bringing this about.

Around 1970, there was hardly a developing country in which some basic questions relating to technology were even raised in the decision-making process. Rarely did anyone ask: does the country have a particular technology? Can it develop it? How long will it take? What resources have to be marshalled to develop it? What are the trade-offs between importing technology now and setting in motion the process of generating domestic technological capacity? Even some much simpler questions were generally overlooked. For instance: how many agreements and arrangements concerning the transfer of technology does the country have? What sectors do they cover? What are their financial implications — direct and indirect costs? What terms and conditions do they contain? What options were explored? Was anything done to unpackage technology imports so as to promote the development of horizontal and vertical linkages? Do these arrangements affect adversely the country's ability to adapt or modify the technology imported so as to suit the specific conditions in the country?

There were in the late 1960s a few developing countries — India, Egypt, the Andean Pact nations — where these questions were beginning to be raised. But even there, it was striking that in this vast government apparatus there was a complete absence of any institutional structures charged with the responsibility of negotiating the best terms and conditions for the transfer of technology and coordinating the decisions needed for developing national technological capacity.

The situation has now altered beyond recognition. Over 40 developing countries — including China — have formulated their own technology policies. They account for nearly 90 per cent of the population — and an even larger share of the output — of the Third World. New institutional structures abound — Registries, Centres, Departments, Councils, Commissions, Divisions — to implement new approaches to technology. Some have begun to formulate plans as an integral component of national development policies. A few are taking the first steps to put their technology strategy into a long-term perspective, covering at least a 20-year period. A number of these have established special ministries dealing with technology (and science) issues at the highest policy-making level.

Many elements have contributed to this decisive change, but UNCTAD has played a central role. This article lists the initiatives launched in UNCTAD since 1970, setting the stage for new departures in the 1980s and beyond. It is hoped that this will facilitate a critical assessment of the ground covered, and of the promises and constraints in the period ahead.

UNCTAD Initiatives 1970 to 1984

Dimensions

UNCTAD initiatives in the field of technology cover a very wide spectrum. They have been the subject of negotiations at 32 intergovernmental meetings specially devoted to technology issues, with open-ended participation of all states members of UNCTAD. (This figure excludes the various UNCTAD sessions, its Trade and Development Board and the UN General Assembly, which were also concerned with technology issues.) They have been discussed among the developing countries at a large number of regional/interregional seminars, workshops and training programmes, in-house and on-the-job training programmes and in-field programmes at national and sub-regional/regional levels. In addition, they have stimulated preparatory meetings by each of the regional groups — Group B (developed market-

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economy countries), Group D (developed socialist countries of Eastern Europe) and Group of 77 (developing countries), as well as the People's Republic of China, which constitutes a single-member regional group within UNCTAD.

These intergovernmental meetings in the General Assembly, Trade and Development Board, UNCTAD and UNCTAD's Committee on the Transfer of Technology have adopted a grand total of 93 recommendations, resolutions and decisions, each embodying an advance in international consensus on technology issues. If the negotiated text of the draft of the Code of Conduct on the Transfer of Technology is added to these resolutions, the total text would run to around 300 pages of single-spaced typescript. Length is of course no indicator of the substance of the results. But it does convey the magnitude of UNCTAD's success in focusing world attention on technology issues.

One final indicator of the efforts UNCTAD has put into launching these initiatives may be given here. It concerns the contribution of the UNCTAD Secretariat. Apart from servicing the meetings mentioned above and bringing about some kind of consensus at them, the Secretariat has published over 200 studies and reports, which have usually served as the fountain-head of these initiatives. Of these at least 20 studies have proved to be more than ephemeral — particularly those which were responsible for launching each of the initiatives listed below.

Selected Initiatives of UNCTAD

This article cannot attempt to describe all UNCTAD's initiatives. It therefore limits itself to listing the most important ones. Each of the headings below conceals behind its brief description a great deal of work by the Secretariat in raising the issues and patient negotiations to reach consensus among countries with conflicting interests (those who own the technology and those who want easy and improved access to it on reasonable terms and conditions).

The list is divided into two broad parts. First, those which were at the centre of world discussions in the first phase of UNCTAD's work during 1970 to 1983, subdivided into calls for action at the national level and for collective self-reliance in developing countries on the one hand, and, on the other, for governmental negotiations between developed and developing countries aimed at restructuring the international technological environment; and secondly, those which will dominate during the second phase — 1980s and onward — which was launched at the sixth session of UNCTAD in Belgrade in 1983.

Major initiatives in the first phase (1973-83)

In this area of strengthening national capacity for technological transformation and promoting collective self-reliance UNCTAD has sponsored and encouraged:

i) a *conceptual change* from concern with simple transfer of technology, towards the transfer and development of technology and strengthening national technological capacity, aimed at reducing external technological dependence, strengthening the bargaining position with transnational corporations and building up national capacity to choose, adapt, develop and diffuse technologies;

ii) the adoption of *national policies, plans, strategies, laws, regulations, rules, decrees, administrative practices* consistent with overall national development policies and reflecting this widened conception of technology issues;

iii) the *establishment of national centres,* or equivalent institutional machinery in most developing countries (some have already created special ministries for science and technology, with most of their work concentrating on technology issues);

iv) the establishment of *regional centres* on transfer of technology in Asia, Africa and Latin America; the centre for West Asia is awaiting consideration pending an improvement in the political situation of the region;

v) the *promotion of cooperative exchange of skilled manpower* among the developing countries;

vi) the adoption of policies and measures to tackle the technology problems faced by the developing countries in sectors of specific significance, such as *food processing, capital goods and energy*, designed to strengthen their domestic technological capacity to meet these problems locally where possible;

vii) the adoption of national policies concerning technological problems to do with *pharmaceuticals* in developing countries;

viii) the establishment in 1976 of an *Advisory Service on Transfer of Technology* to respond to urgent requests by developing countries for technical and operational assistance, including the organisation of specific country missions and of training programmes;

ix) UNCTAD has encouraged the formulation and implementation of a *strategy for the technological transformation of the developing countries*, weaving together the initiatives listed above and integrating technology policies, plans and strategies into the framework of a long-term comprehensive national development perspective;

Negotiations on restructuring the international technological environment

UNCTAD has worked for:

x) the establishment of an international *code of conduct* on transfer of technology, setting universally acceptable norms and standards governing the exchange of technology among all countries, but particularly between the developed — both capitalist and socialist — countries and the developing countries. The negotiations on the Code have come a long way now, with agreement reached on all clauses except for the chapeau for the agreed provisions on restrictive practices, and the articles on applicable law and settlement of disputes. The sixth session of the UN Conference on the Code, scheduled for early 1985, could see the completion of this major instrument for bringing about greater transparency and commercialisation of technology transactions;

xi) UNCTAD has also acted for the *revision of the industrial property system, including the Paris Convention*. The six revisions to date have consolidated further the monopolistic rights of patent holders; with UNCTAD's efforts the 1980s could see the pendulum pushed a bit in the other direction, giving the developing countries greater freedom to protect their national interests, and enabling far-reaching modifications of archaic national laws and practices in developing countries on industrial property (particularly patents and trademarks);

xii) a consideration of the adverse impact of the *reverse transfer of technology* (brain drain) from developing countries, and the adoption of adequate policies to counteract it, including measures to compensate the developing countries for the estimated capital contribution by skilled personnel to the economies of the developed countries.

New Directions for the 1980s and Beyond

UNCTAD's current and future efforts will promote:

i) *interregional linkages and technological co-operation* among developing countries;

ii) in-depth intergovernmental examination of *technology policies in sectors and areas of critical significance*;

iii) the *role of small and medium-sized enterprises* in the international transfer of technology;

iv) the project on the formulation of appropriate *strategies for facilitating pharmaceutical supplies* to the developing countries, jointly undertaken by several agencies under the leadership of WHO;

v) examination of specific policies for *new and emerging technologies*, such as biotechnology, solar energy technology and microelectronics;

vi) the commercialisation of the *results of UN-funded research and development*, opening up the possibility of decommercialising technologies developed by multilateral agencies;

vii) concrete ways and means for developing countries to obtain the *fullest and freest possible access to technology in the public domain*;

viii) contained negotiations of measures to obviate the adverse consequences of the *reverse transfer of technology*;

ix) completion of negotiations on the *Code of Conduct* on transfer of technology;

x) a prominent contribution to the negotiations in WIPO on the *revision of the Paris Convention*.

These initiatives have followed from a perspective which, to begin with, underlines the differences between *science* which is open, and *technology* which is guarded mainly by the transnational corporations, in order to obtain high economic gains. In consequence, technology transactions entered into by developing countries contain severe restrictions limiting the utilisation of the technology to their maximum benefit and raising the direct and indirect costs. The most handicapped in these transactions are the weakest partners, particularly from the developing countries. It is essential, therefore, to set universally acceptable norms and standards governing the transfer of technology to developing countries, and at the same time to strengthen these countries' bargaining power and technological capacity. The restructuring of existing technological relations between the developed and the developing countries has to proceed in parallel with the evolution of long-term strategies for the technological transformation of the developing countries. The most critical element in such strategies is the coordinated development of capital goods and skilled manpower, both of which embody technology.

Looking Back at UNCTAD's Record

It is not easy to look back on the last 15 years of UNCTAD's involvement in technology issues and to assess the record. Such an assessment is liable to be either too hasty, too self-congratulatory or too self-critical. The 15-year period is short compared to that spent on other issues. Moreover, five years were taken up in preparing the groundwork, and in the last six to eight years, given the aggravation of the world economic situation, the promise of international cooperation in the early post-war period has wilted under national strains. The elaboration of technology issues had to be done without the benefit of an intellectual heritage. Moreover, the interests involved are formidable. Most of the world's technological

know-how has been appropriated by powerful transnational corporations which restrict access except at heavy costs and under severe terms and conditions. Third World countries have very limited bargaining power or ability for decisive unilateral action when faced with such a forceful combination of private interests. But despite these limiting factors, some positive steps have been taken.

Perhaps the most fundamental is that in response to UNCTAD's conceptualisation of the issues, in the last 15 years a new idiom of understanding, a new language of discussion has emerged, particularly in the developing countries. Earlier, nobody talked technology. Now, issues have become known, and even when solutions are not very easy to arrive at, there is a large and expressive vocabulary in which the views are argued at UNCTAD.

Several areas of visible impact can also be identified. We may begin with the three areas in which protracted negotiations have taken place.

i) The Code is almost there. Its provisions now guide both negotiations among enterprises and government policies, and in this sense it is almost operational.

ii) Following UNCTAD's substantive intervention, the Paris Convention and the industrial property system will never be the same, both at the international and national levels.

iii) No agreement is in sight on the Reverse Transfer of Technology, but the issue is still alive. Whatever the final outcome of these delicate negotiations, policy-makers in developing countries are now well-equipped with statistics, arguments and precise tools to measure skill-flows and human capital.

Secondly, there has been an important advance in action at the national level, with the establishment in 40 developing countries of institutions, instruments and a systematic framework guiding their technology policy at national and sectoral level. UNCTAD's own Advisory Service on Transfer of Technology has complemented these national measures and helped developing countries obtain technical and operational assistance.

The biggest weakness of UNCTAD's effort may seem to be the absence of *final* agreements on issues under negotiation. This, one may suggest, is not the result of a failure of intellect or of the absence of any elegant or erudite gimmickry. It merely reflects the difficulty of closing the gap between the very powerful and the very weak through international negotiation — bridges will be less difficult to build once the weak have become a bit stronger.