SYMPOSIUM ON SCIENCE, TECHNOLOGY AND INNOVATION: THE IMPLICATIONS OF THE STIAC REPORT FOR IRELAND'S ECONOMIC DEVELOPMENT

Technology Foresight

T. P. HARDIMAN

(read before the Society, 16 November 1995)

_____

Following the investment in education OECD study in the early sixties the significance of technology to economic development became more apparent. The setting up of the National Science Council under the chairmanship of Professor Colm O hEocha was a result as was the well-informed study and report on technological education led by Professor Noel Mulcahy which brought in its train the establishment of the RTC network strategically located around the regions.

The NSC did remarkable work in difficult circumstances in ensuring funding of research and in creating a basis for a systematic approach to priority setting. The statutory NBST, which followed the NSC in 1978, expanded and elaborated the basis of University research funding (including the funding of research co-operation with industry), produced an annual Science Budget, developed a national programme in science and technology and opened up an active participation in European Community science and technology programmes.

Regrettably, the problems in the public finances in the early eighties overshadowed the emerging recognition of economic benefits deriving from a planned and coherent investment in science and technology. The development of Science Policy, in the sense of charting the economic consequences of public investment in science and technology, was not pursued and the mid-eighties concern with the fiscal disarray saw the merging of certain agencies and the closing down of others.

Foreign direct investment in Ireland has been beneficial to economic growth and employment. It brought with it advanced technological skills and production know-how but few foreign owned companies have developed beyond the production function to become integrated business entities and linkages with the indigenous sector have been largely limited to sub-supply. It is to be hoped that the reorganisation of the development agencies in recent times will improve matters by ensuring a sharper focus on deeper linkages and by stimulating domestic SMEs.

The recently established joint Council between IBEC and the Universities is welcome in acknowledging the benefits of more active co-operation between university research and industry, foreign owned and indigenous. The RTCs have recently come within the scope of the HEA and the greater freedom now allowed to the Colleges to respond to the research and technology transfer needs of industry, particularly small industry, should have a productive outcome.

It is realistic now to look at a wider participation in the setting of goals and priorities for our science and technology effort. The report of the Science, Technology and Innovation Advisory Committee provided a thorough-going analysis of science, technology and innovation in Ireland and set out comprehensive proposals for the correction of funding deficiencies and inadequacies in the institutional mechanisms.

It is understood that the Task force, headed by Forfás Chief Executive John Travers, has completed its review of the many proposals and recommendations in the STIAC Report and that this review will be brought before the Government soon. Other speakers here, who were active in the Committee, assess the thrust of the STIAC Report and the likely follow up. My comments relate to the proposal in the Report that a Technology Foresight programme should be examined in the Irish context. It is of interest that this proposal was initiated by Forfás.

Arrangements for Technology Foresight are being pursued in the developed countries, including those of comparable size to Ireland, in the knowledge that it is not possible to be at the forefront in every area of science and technology. Publicly funded research, at this time of fiscal prudence in all developed countries is subject to value-for-money and public accountability scrutiny.

Technology Foresight is a process that systematically attempts to look into the longer-term future of science, technology, the economy and society with the aim of identifying the areas of strategic research and the emerging technologies likely to yield the greatest economic and social benefits. The Technology Foresight process involves consultative procedures to ensure two-way exchanges with the key actors and creates improved understanding of possible future developments and the forces that structure them.

There are many possible futures and the destination reached depends on the decisions taken now. The aim of Technology Foresight is to explore these possible futures through a process of consultation among business, research, the public sector and the general public with the objective of identifying areas where the country can derive maximum economic benefit by bringing a more deterministic attitude to the future than is achieved by relying on simple extrapolative forecasting. Technology Foresight is not about prediction - its primary purpose is influence.

The Japanese were first in the field of Technology Foresight back in 1970. The technique used then and much in use since was the Delphi Survey where experts give

an indication of the scientific and technological developments they foresee within a given time horizon. A first assessment of the responses is fed back for further expression of expert opinion enabling a picture of future trends to be built up.

Other approaches to Technology Forecasting include Scenario Writing, now used by the Dutch, which involves building logical sequences of events in the external environment in order to show how future technological trends might evolve from the present. Direct Consultation, used in the UK, employs workshops to involve a wide circle of interested organisations and individuals. Technology Foresight programmes have been pursued in Germany (using the approach developed in Japan), in France, Finland, Australia and New Zealand.

Forfás in early October invited a group of potentially interested persons to consider the question of Technology Foresight in Ireland. The group, which has convened twice in recent weeks, includes Departmental and Agency officials, University and Research Institute representatives and business/industry executives. The group takes the view that the launching of a Technology Foresight process in Ireland should be pursued and it will present a report by year end on the procedures judged appropriate in the Irish context.