

Speech by Liam Connellan, Director General, Confederation of Irish Industry at Seminar on Distance Education at National Institute for Higher Education, Dublin, on Thursday, 3 June 1982

The Pace of Change over the Last Decade

Ireland is a modern industrial economy. There is a higher proportion of the workforce engaged in industry in Ireland than in highly developed countries such as the United States, Denmark and the Netherlands. Industry now accounts for about two thirds of the productive base of the economy producing internationally traded goods and services.

The pace of change over the last decade has been particularly dramatic. Industry in Ireland has expanded twice as rapidly as the average in the European Community and there is no reason why this performance cannot be continued over the next decade.

While the structure of the economy was changing, so also was the structure of manufacturing industry. Over the last decade, there has been a rapid growth in the output of the metals and engineering sector, including electronics which now employs more people than food processing. On the other hand, the output of traditional sectors such as wool textiles and clothing has declined significantly.

It is worth noting the similarities which exist between the proportion of total manufacturing employees engaged in individual sectors of industry in Ireland and the average throughout the European Community. Major variations are

in food processing, where Ireland retains an exceptionally high proportion of employment, and in engineering. This relatively greater concentration of employment in the food industry is likely to continue, since Ireland has three times more agricultural land per head of population than the EEC average - a factor which will ensure that agriculture and food processing remain major contributors to Irish economic development. The most rapidly expanding industrial sectors in recent years have been chemicals and electrical engineering, particularly electronics. Over the last decade, these sectors have accounted for almost all the growth in industrial employment.

The changing structure highlights the continuing change which will always occur in the productive sector of the economy. Industrial sectors rise and decline over long periods of time. Thus, just as the 1600s witnessed the growth of the woollen industry; the 1700s the growth of the silk industry; the 1800s the growth of the linen and ship-building industries, particularly in the northeast; the latter half of this century has witnessed a remarkable growth in the electronic industries, which is likely to be followed by major developments in biotechnology in the 1990s.

There have also been major changes in the distribution of Irish trade. Ten years ago 54% of Irish exports were sold to Britain and 10% to continental EEC countries. In 1981, that proportion had changed to 33% exports to Britain and 30% to continental EEC countries. This trade diversification has had the major advantage of spreading the potential risk for Irish industry, which could result from a decline in any single market, but it also places more emphasis for the need for effective communications in transport, telecommunications and knowledge of continental languages.

The decision to join the European Community in 1973, and the subsequent decision to join the European Monetary System in 1979, have both contributed to and required major changes in attitudes.

There have also been significant demographic changes. Over the last decade the pattern of emigration was halted and replaced by net immigration in the 1970s. The age structure of the Irish population is the youngest in the EEC. This change in age structure has probably enabled us to cope more readily with rapid change than would have been possible in the 1950s, when the average age of the population was much higher.

Over the last decade, Irish industry also adapted to free trade. It may be forgotten that as recently as 1970 Ireland had protective tariff barriers of 24% against competing imports from the United Kingdom, and 60% tariff protection against competing imports from continental Europe. These tariffs have been eliminated since January 1978 and manufacturing industry in Ireland has coped better than industry in most other European countries with the recession of the last three years. Industrial output in Ireland is now about 1% higher than the average 1979 level compared with a fall of 6% in the United Kingdom and 2% in the EEC as a whole.

These figures illustrate some of the dramatic changes which have taken place and with which we have coped over the last decade. There were many other changes. For example, the development of the National Institutes for Higher Education in Dublin and Limerick, and of nine Regional Technical Colleges throughout the country, and the Limerick Technical College have resulted in third level higher technical education becoming available for many thousands of young people.

Future Changes

Let us look at developments in one of the sectors of industry which is likely to have a major impact on the economy in the coming years. I refer to the electronics and informatics industry.

There are now about 100 companies in Ireland manufacturing electronic products. They employ about 16,000 people and have an annual output of £800 million, most of which is exported. Electrical and electronic products now account for about 16% of total exports compared to meat products 15%, dairy products 8%, textiles 5% and clothing 2%. Ireland now produces about 2% of the total demand in the European Community for computer products and, in some segments of the market, already accounts for 10% of European demand. The output of the industry in Ireland has doubled over the last two years; within a few years the industry is expected to employ directly about 40,000 people.

The manufacture of microelectronics and microprocessor based products is particularly well suited to Ireland for the following reasons :

1. Such products are small in volume and high in value - transport costs are not significant, an important consideration in view of our geographical location;
2. It is a clean industry with no pollution characteristics;
3. Working conditions and hygiene within the manufacturing plants are at the highest standard;
4. It is a light industry equally suited to male and female workers;

5. The industry places a premium on technical knowledge and skills;
6. The technology used in manufacture requires a precision in measurement and in process control which can have spinoff applications in many other industrial sectors. The transfer of technology can be of major assistance to older sectors of industry.
7. Technical knowledge within the industry is changing rapidly. It should be easier for a country with a very young population structure to adapt its education and training emphasis for maximum relevance, than to achieve the equivalent performance by re-educating and retraining an older workforce.
8. The greater the opportunity to obtain exciting careers in microprocessor manufacture application, the greater the possibility that technical innovation can be achieved in Ireland.

The rapid development of the microprocessor based manufacturing industry has five major implications for the Irish economy :

1. Ireland can become a significant centre of excellence for the manufacture of these products in the EEC. Irish exports per capita of electronic products are already three times higher than those of the United Kingdom.
2. The location of a significant manufacturing centre will stimulate the more rapid growth of the associated computer services sector. It is estimated that there

are about 14,000 people employed in selling, servicing, developing software, and preparing data or operating computers in Ireland.

3. There will be a significant spinoff from the electronics manufacturing and servicing sector to other sectors of industry and commerce in Ireland. This will enable products and services to be upgraded and boost competitiveness.
4. Microprocessor applications must permeate all sectors of Irish society. It is vitally important that the microprocessor is applied with enthusiasm and commitment in every sector in order to improve productivity, raise quality, reduce costs and increase demand for Irish made products. This approach must be adopted, not only in manufacturing, but also in the provision of administrative type services, in order to improve the overall efficiency of the economy.
5. The change in technology made possible by the microprocessor will create a demand for a major increase in the number of technicians and technologists produced by the education system. The 1980s will be the decade of the technologist it he application of the microprocessor.

The cost of computers is falling rapidly. Already there are quite powerful microcomputers available at the same cost as an electric typewriter. These computers can store a significant amount of information and can remove much of the drudgery associated with analysis and computation. They can ensure that accurate information is provided almost instantaneously so that better decisions can be made. Such equipment offers the opportunity to achieve major improvements in efficiency throughout the economy.

The Role of Continuing Education

The main bottleneck in technological development is, usually, not the availability of technology which will enable processes to be carried out more efficiently, but the capacity of people to understand the potential of new products and to incorporate them in applications as soon as they become economically viable. The primary challenge is to bridge the gap between potential and practical application. In this way productivity can be increased while reducing physical effort and cost. The country which can apply new technology at a faster rate than its competitors will obtain a competitive advantage.

Despite the rapid growth in the number of engineering graduates, diplomates and certificates, qualifying each year, Ireland has still only one third the proportion of engineers in the economy compared with the United States.

The supply of technical manpower will have a direct bearing on the rate at which the economy adapts to new technology and will have a strong influence on the base of economic development.

However, annual new entrants account for only 3% of the workforce. The 97% of the people already in the workforce must also keep up to date with developments, to understand and respond positively to the changes which are taking place in the economy. Continuing education has a major contribution to make in this area. Television, and video systems can play a major role in raising the level of appreciation throughout our whole community of the changes taking place. I support strongly the proposals to develop computer appreciation courses and basic programming courses for television, while the availability of video tapes of these programmes would be extremely beneficial.

I have concentrated on the use and understanding of new technologies. These comments must be seen in a broader context of marketing and innovation within the economy. Irish industry has evolved to the stage where it has mastered the fundamental techniques of production and will in future be placing increased emphasis on marketing and product development. Identification of special niches in international markets which can be filled efficiently by Irish products will secure the sustained development of industry in Ireland. The development of new products and processes can give this country a competitive edge over our trading partners. This is a much more difficult phase of development than that of mastering basic production techniques. Success in these efforts will be a function of our capacity to innovate from a foundation of market research and technical competence.

Formal adult education courses can make a major contribution to the economic and social development during a period of rapid change. I estimate that about 15% of the adult population currently participates in adult education courses. However, only a small proportion of these students are studying subjects which reflect the changing demands of the market place and the impact of new technology on everyday work.

I would like to see a much greater emphasis on work related courses in programmes for adult education. It is desirable that these courses should lead to specialist certificates of competence. This would stimulate the motivation for personal development and the achievement of higher standards of knowledge and skill. Organisation of courses of this nature should be an integral part of the work of educational institutions and should make full use of distance learning techniques such as television programmes and video recordings.

The Irish economy has many advantages. It must combine the advantages of youth, willingness to change, and access to technologies with commitment and enthusiasm to speed up the pace of economic development and, in this way, create worthwhile employment for the whole population.

Continuing education has a vital role to play in removing fears of the unknown, in creating a better awareness of the changes taking place in our economy, and in ensuring that our response to those changes will be positive and confident.

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