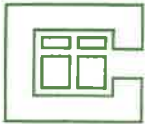


Confederation House  
Kildare Street, Dublin 2  
Telephone 77 98 01  
Telex 47 11  
T'grams Confindus Dublin



Registered in Dublin  
Registered No. 8706

# PRESS RELEASE

## The Confederation of Irish Industry

Speech by Mr Liam Connellan, Director General, Confederation of Irish Industry to the Institute of Guidance Counsellors at the Grand Hotel, Malahide, at 2.45 p.m. on Saturday, November 18, 1978

---

The Government's White Paper on National Development, 1978 - 1980 places the main emphasis for national and social development on industry. There are now far more people working in the industrial sector of the economy than in agriculture.

Industry is the main motor for growth in the economy and will become increasingly so. The structure of industry is changing rapidly. It is becoming more technical and requires people with greater technical knowledge and skill.

There is ample evidence that industry has a preference for staff with technical qualifications. Almost 600 students with post Leaving Certificate technical qualifications, such as NCEA certificates and diplomas, are now finding jobs annually, compared with less than 300 five years ago. Although the number of engineering graduates from the universities has increased by one third to almost 350 over the same period, there are shortages of mechanical and production engineers. Furthermore the proportion of employees having vocational school qualifications is much higher in the newer industrial sectors.

The rate of industrial growth which can be achieved will be influenced in large measure by the ability of the people in industry to cope with the rapid pace of technological change.

I would strongly recommend that teachers should encourage their best pupils to consider a career in industry. Work in industry is challenging and provides scope for advancement. It can involve buying and selling of products at home and abroad; it can involve producing the product, making use of the best available technology; researching improvements in the product and in the manufacturing process; planning and controlling product cost; and, above all, working with your colleagues in competition with the best which other countries can offer. The degree of excellence achieved in industry is directly reflected in the employment opportunities and living standards provided for the whole community. It is vital that industry continues to attract the best skills and competence in our society.

END

3

Speech by Mr Liam Connellan, Director General, Confederation of Irish Industry at the Irish Computer Society/British Computer Society Annual Joint Conference at Wexford at 11 a.m. on Friday, 10 November 1978

---

### THE COMPUTER INDUSTRY IN IRELAND

#### Rapid Growth and Falling Costs

The Computer industry is the most rapidly growing major industrial sector in the world. In Europe alone, it is expected that demand will increase by 13% per annum over the next five years. There have been major advances in technology, computer uses are expanding continually and industry has now become a major source of employment.

Since 1968, there has been a dramatic fall in the cost of producing computers. The cost of computer memories has now dropped to 1/9th of the level ten years ago. During the same period, sales of integrated circuits in the United States have risen eightfold to a total market of £800 million in 1978.

#### Changes in Technology

There have been dramatic changes in computer technology. These relate particularly to the development of computer memory systems. Conventional systems for storing information such as magnetic tapes discs and drums had access times measured in hundredths or thousandths of a second. They were also limited because the information stored had to be retrieved by searching for it in the order in which it was stored.

The next stage was the development of core memories which gave more rapid access but, even these are now being superseded by advanced types of semi-conductor memories, which frequently have the advantage of random access.

The most expensive of these semi-conductor random access memories allows the computer to give access to stored information in a few billionths of a second. A slightly cheaper type, the metal oxide silicon, gives access in a few millionths of a second. Simpler and cheaper memory cells, such as the charge-coupled device and the magnetic bubble, take up little space but are somewhat slower and do not allow random access.

Recently, a new means of storing vast amounts of data (upwards of 1,000 billion bits of information) in a small space has been patented. This method is based upon the use of a laser acting on light-sensitive chemicals.

#### Development of the Computer Industry in Britain

The National Enterprise Board in Britain has recently drawn up a strategy for the development of the computer industry. This plan concentrates on four main areas of development and will cost an estimated £150 million :

- a) Semi-conductor integrated circuits - £50 million
- b) Computer programming - software - £20 million
- c) Computer peripheral equipment - printers, magnetic storage devices etc. - £40 million
- d) Office equipment - £40 million

### The Computer Industry in Ireland

The growth of the computer industry in Ireland reflects international developments.

Twenty years ago, the major international computer manufacturers had established sales and distribution outlets in Ireland.

Shortly afterwards, a number of manufacturing plants were set up. These were complemented by computer component manufacturers which were established to service the component needs of the parent firm. More recently, companies, combining manufacturing and marketing, have been attracted to Ireland. In these cases the Irish subsidiary has considerable autonomy in marketing and pricing.

There are now over forty firms employing about 5,500 people, manufacturing computers or computer components in Ireland. The product range includes semi-conductors, integrated circuits, electronic assemblies, computer cabinetry, mini computers, hybrid circuits, computer cores and mainframe computers. These companies are subsidiaries of parent firms based in Europe, North America or Japan. The largest investment has been from the United States. Chart 1. shows the size distribution of these firms in 1978 and the expected size distribution in 1980.

The computer manufacturing industry is one of the most rapidly expanding sectors in the Irish economy. Apart from the 5,500 people employed in manufacturing, a further 2,500 are employed in providing support software services. The computer manufacturing industry now accounts for more employees than such traditional industrial sectors as footwear and furniture.

The attached map shows the distribution of the 40 computer manufacturing firms in Ireland.

The export performance of the industry in Ireland has been remarkable. Exports of computer equipment in 1977 were valued at £150 million, or over 5% of total Irish exports.

The computer industry is ideally suited to Ireland. Its products are high value, low volume, where transport costs are relatively unimportant. It is also labour intensive and provides high quality employment for technicians and technologists. Careful planning is required by universities, regional technical colleges and vocational schools to ensure that the education provided closely matches the expected demand from the industry over the next decade.

The computer industry provides additional job opportunities through sub-contracting operations. A large number of the older established industries in Ireland are manufacturing components for computer manufacturers e.g. cabinets, wiring, harnesses, cable looms, paint, packaging, printed material and fabricated parts. The National Board for Science and Technology is currently conducting a number of studies to establish the future demand on the telecommunications system resulting from data transmission needs; the computer requirements of the dairy industry; the construction industry; and the health sector. It is also seeking to establish the strengths and weaknesses and opportunities within the industry in relation to hardware and software services.

### The Computer Manufacturing Industry in Ireland and the EEC

Ireland has become a significant European manufacturer of computer equipment. The output of the computer industry in Ireland represents about 3% of European production.

The European Commission has expressed keen interest in developing a European computer manufacturing capacity. It is appropriate that Ireland should participate strongly in efforts to develop the industry in Europe, since this country is particularly suitable for a major expansion in this sector of industry. The international nature of the industry in Ireland places it in a strong position to participate actively in the development of European manufacturing and research capability.

### The Uses of Computers in Irish Industry

The first computer was installed in Ireland in the late 1950s. The development of computer usage in Ireland during the 1960s was steady but not dramatic. This was due to their large size, high cost and new technology. Many industries had their first experience of computers by using the service of a computer bureau. Initially, computer bureau services were used for invoicing, payroll, statements and stock control. Even small and medium sized businesses found that such exercises were worthwhile.

It is estimated that the computer services market, which employs 2,500 people, is likely to grow by about 20% per annum during the next few years. Furthermore, in recent years, a range of standardised packages has been developed for basic business calculations and procedures.

Until quite recently, the purchase of computing equipment required substantial capital investment. The arrival of the mini computer two years ago, has altered the trend in computer size and cost. Each year, computers are becoming smaller and less expensive. The availability of standard software packages for basic routines, such as invoicing, payroll and stock control, increases the attractiveness of this equipment for relatively small companies.

It has been estimated that capital investment in computers in Ireland has expanded from £8 million in 1970 to £40 million in 1975. Currently hardware sales are about £8 million to £10 million per annum and software about £5 million to £6million per annum. Even these figures were proportionately low by European standards. However, the market is currently thought to be growing by 20% to 25% per annum. Much of this increased demand is from industrial firms which have established in Ireland. It is now estimated that there are between 200 and 260 computer installations in Ireland. There is an increased tendency to use computers for problem solving, as well as for storing and processing information. Such uses include production control, inventory control, quality control, and design.

#### Computer Personnel

There are indications of a shortage of skilled computer personnel. I understand that some comprehensive surveys are in progress to establish accurately the precise needs. The shortage of personnel appears to be particularly acute in the mini computer area. It is essential that a forecast of demand is prepared for computer programmers, systems analysts, and data processing managers, and that appropriate steps are taken by the regional technical colleges, universities, and AnCO to ensure that this demand is satisfied. It would be a pity if the rate of technological development of Irish industry was hindered because of lack of suitably trained personnel in this area.

#### Telecommunications and Data Processing

Data communications is one of the rapidly growing sectors of the telecommunications industry. It is now common practice to transmit data internationally between companies by means of a telecommunications network.

Since 1968, the airline industry in Ireland has had a data transmission system, linking Ireland and London. This network has now been extended to the United States, Europe and Hong Kong. The major banking groups have developed a data communications network between their group branches. A number of manufacturing companies, with headquarters in Ireland, have a data communications network, linking all factories to the head office. Similarly, many subsidiaries of international firms which have set up in Ireland are linked in to international data communications systems.

In Ireland, we have a large number of independent data communications networks, using the normal telephone lines. It would be highly desirable to develop a national data network which could be shared by all users; have the advantage of reduced line cost; and would bring this area of data communications within the scope of smaller firms.

Computer users in Ireland had access to 13 international bases in 1976. These were predominantly in the chemical, biological, physics, medical and engineering areas. These international data bases provide access at a cheap rate to valuable information. Complex searches can be done for a relatively small fee. Computer searching of data bases produces an efficient, fast, reliable and cheap service, and is superior to conventional information retrieval systems.

The Euronet network, which will be in operation in 1979, will provide a massive computerised information service on work carried out in fields of science and technology across Europe. Subscribers will be able to avail of the service by using the telephone. The major limitations on this type of technology appear to lie in the quality of the line connecting computer installations and terminals.

Micro Computers and Micro Processors

The development of micro processors in 1971 and micro computers in 1975, has resulted in sophisticated and powerful computing facilities being put within the reach of the smaller business. It is expected that, as software packages for micro computers are developed, demand for their use in industry will expand rapidly. It is expected by the industry that a full range of software packages will be available within the next year.

It is expected that the micro computer will bring considerable advantages to smaller firms. It is also expected that they will be a low cost, high performance tool of management.

The mini and micro computer have major applications in office work. Increasingly, firms are purchasing office equipment, such as telex, typewriters and phone systems which have the potential of being integrated into one office system.

Chart 3 shows the spread of mini computer applications in Western Europe in 1975

CHART 3.

<u>MINI COMPUTER APPLICATIONS IN WESTERN EUROPE - 1975</u>	
<u>Total Market = £200 million</u>	
<u>Section of Market</u>	<u>%</u>
Analytical Instrumentation & Laboratory Automation	31
Date Communications	27
Industrial Control	22
Business	7
Others	13

The growth areas in mini computer applications are data communications and the small business system market. The major potential growth areas are office automation systems, which would incorporate word processing, facsimile transmission, electronic mail and micro film retrieval. These latter, however, will probably take some years to develop.

### The Future

The widespread use of the mini computer and the expected widespread use of the micro computer, associated with the consolidation of the electronic, computer and telecommunication industries can make a major contribution to the development of industry and commerce.

For the last decade, this country has been successful in attracting a large number of firms manufacturing computer components or finished products.

Computer technology is advancing so fast and in so many areas that it is vital to keep up to date with worldwide developments. The computer industry is important, not only for the work which it provides in Ireland, but also for the great contribution which it can make to the development of all industrial sectors. It is of the utmost importance that our education and training system relates closely to these developments.

It is expected that there will be a major development of public data networks throughout Europe during the next few years. The Euronet network for European science and technology should be operational in 1979. It is expected that this network will, eventually, develop into a multi-purpose network, having open access to data bases scattered around

Europe. France, Canada and the United States will have national public data networks operational within the next decade. We do not, as yet, have any indication when, if ever, a national data network is envisaged for Ireland.

Competitive advantage for Irish industry can be gained by making the best use of new technology as soon as it becomes economically justified. Developments in computer technology have already made a major contribution to the competitiveness of Irish industry. There is every likelihood that this contribution will become very much greater over the next decade.

---

CHART 1.

SIZE DISTRIBUTION IN MANUFACTURING (November 1978)

<u>Category</u>	<u>Size Category</u>	<u>No. of Firms 1978</u>	<u>No. of Firms 1980 (Projected)</u>
A	Up to 50 employees	26	31
B	50 - 100 "	5	6
C	100 - 200 "	8	12
D	200 - 500 "	3	8
E	500 and over "	3	6
	T O T A L :	45 employing 5,500	63 employing 8,200

E.C. Johnston  
6.11.78 sc

TABLE 2.

Boys studying subjects relevant to Industry according to type of school, as a percentage of total studying those subjects.

Level	Subject	Secondary	Vocational
Intermedicate Certificate	Metal Work	4	85
	Mechanical Drawing	24	65
	Science (A & E)	57	36
Leaving Certificate	Engineering Workshop		
	- Theory & Practice	5	84
	Technical Drawing	16	72
	Physics	83	12
	Chemistry	86	10

CHART 3.

MINI COMPUTER APPLICATIONS IN WESTERN EUROPE - 1975

Total Market = £200 million

<u>Section of Market</u>	<u>%</u>
Analytical Instrumentation & Laboratory Automation	31
Data Communications	27
Industrial Control	22
Business	7
Others	13