

Engineering Industry and Engineering Education in Ireland*

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The importance of the engineering industry to the Irish economy is significant, and growing. To continue this growth it needs to build on its competitive strengths such as access to Europe, an educated labour force and its reputation in the high growth instrument, electrical engineering and electronics industry sectors. Willingness to change has been and will continue to be a key issue for the Irish engineering industry.

THE ENGINEERING INDUSTRY (including electronics) is one of the most important contributors to the Irish economy in terms of employment, output and exports. Employment and exports of the engineering industry has increased significantly since 1990, and accounts for approximately 40% of all manufacturing employment, giving a total labour force now of circa 100,000. This industry is one of the top three exporting sectors in the country.

The main engineering sectors are:

- electronics
- automotive components
- materials handling
- mechanical engineering
- electrical equipment
- building products
- aerospace services.

The indigenous sector is quite diverse, ranging from traditional fabrication of metal products for the industrial and domestic markets to precision engineering of sophisticated components for industries such as pharmaceutical, medical, electronics and aerospace. The industry is comprised of individual firms engaged in various activities. Each firm is different in terms of size, ownership, served markets and stage of development. During the 1990s, employment growth in the more traditional end of the industry has been static as against significant growth in the higher value-added segments of the indigenous sector, especially electronics.

The overseas engineering sector in Ireland continues to grow both in size and sophistication, keeping pace with the booming Irish economy. There are over 300 foreign-owned engineering firms in Ireland, employing between them approximately 50,000 people. Many world-class manufacturing operations based in Ireland are international reference sites. The industry is

supported by a strong indigenous sub-supply base and by advanced manufacturing technology initiatives in Universities and other third-level institutes.

There is a large number of companies in Ireland that are able to supply components and services. Everything from tools and mould-making, to sub-assembly, to test and certification services are readily available. Components and services are supplied to the highest international standards.

Companies setting up in Ireland can avail of a young, skilled and flexible workforce. Ireland boasts a large pool of engineers and technicians with relevant electronic, mechanical and materials engineering training. Accredited to the highest international standards (ISO 9000), the companies are experienced in meeting the exacting demands of engineering manufacturers, including JIT supply. Using the latest technology in CAD/CAM and CNC equipment, a highly-trained and experienced workforce of designers, toolmakers and engineers, has earned Ireland an international reputation for excellence in toolmaking.

In order to remain competitive, firms in the engineering industry must respond by becoming world class. World-class businesses continually innovate and improve performance. The key areas being addressed are Research and Development and new product introduction. A critical issue for the engineering sector is the exploitation of technological advances in terms of product development and production processes. Technological research and development is essential to the needs of a modern economy.

The educational and skills level of Ireland's work-force represents the single, most important factor in the development of the enterprise sector. Quality products and services require a high level of competency; competitiveness of industry depends on adaptable and competent workforces especially engineering personnel. The pace of technological changes requires ongoing updating of engineering and other key skills if we are to meet successfully the challenges ahead. We have

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recognised the pressing need to tackle the issues of skills needs, manpower forecasting and education for industry and business. Arising from the rate of technological change in many areas of engineering, a knowledge of electronics and software are now at least as important as mechanical engineering.

In this context the Government announced in November 1997 the establishment of a £¼ billion Education Technology Investment Fund. This major new investment in the education and training systems is specifically geared to meeting the short, medium and longer term skills needs of technology and high growth-oriented firms.

We must continue to match demand with a highly skilled and educated workforce to remain globally competitive. For that reason, I and the Minister for Education agreed on the need to develop, on a systematic basis, a partnership arrangement between the education, training and business sectors to identify the practical steps required to secure and maintain a competitive advantage in the area of skills. We have accordingly, established a new Business, Education and Training Partnership which includes a Business/Education Partnership Forum, an Expert Group on Future Skills, with a Management Implementation Group.

The Joint Business/Education Partnership Forum is widely representative at the highest levels of the business sector, the education sector,

the trade unions, Government Departments and the development agencies. The Expert Group on Future Skills is considering strategic issues in developing partnership between business, education/continuous training sectors in meeting skills needs of business.

A key issue for the engineering industry is 'learning to change'. Companies must be flexible, be keenly aware of customer needs, changing technology and market development. They must continuously improve. As has already been indicated, the importance of the engineering industry to the Irish economy is significant, and growing. To continue this growth it needs to build on its competitive strengths such as access to Europe, an educated labour force and its reputation in the high growth instrument, electrical engineering and electronics industry sectors.

However, the practice of engineering has and is changing significantly. Consequently our educational institutions will have to continually adapt and develop training and qualifications in the different branches of engineering and related disciplines so as to respond to the future needs of the engineering industry as it faces into the 21st century. There are many challenges ahead but we can be successful through a partnership approach involving all the key interests in the public sector, including of course our education resources, industry and trade unions.