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Appendices

Chapter 1

Enterprise environment

Give a person a fish and he/she has food for a day; teach a person to fish and he/she has food for life.

Adapted from an ancient Chinese proverb

Learning objectives

- To trace the development of enterprise in Ireland from protectionism to recent times
- To consider the important role of small and medium enterprises
- To explore possible future business opportunities, especially arising from investment in the knowledge economy
- To consider future skills needs and regional development in the context of the National Spatial Strategy
- To know the State organisations that support Irish enterprise.

This chapter is structured as follows:

1.1 Introduction
1.2 Economic development
1.3 Role of small and medium enterprises (SMEs)
1.4 Future business opportunities for Ireland
1.5 Knowledge economy
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1.1 Introduction

Enterprise is essential for the economic, social and cultural development of all nations. The United States of America (USA) is regarded as a very enterprising society, where the growth of small businesses is the prime motivator of economic development. Enterprise development and innovation are part of the fabric of that society, reinforced by educational, economic, social and political institutions as well as the media. Attitudes are conditioned by the big American dream; that anyone, regardless of background, can make it in business and where failure is seen as a learning experience. Entrepreneurship is espoused early as a possible career choice and constantly acclaimed by society. Stories of famous American inventors such as Benjamin Franklin and Thomas Edison as well as great entrepreneurs such as Andrew Carnegie, Henry Ford, Bill Gates, Steve Jobs and many others appear in children's books.

Ireland is developing rapidly as an entrepreneurial society. More people are now starting and managing their own businesses and Irish people are the most enterprising in the European Union (Global Entrepreneurship Monitor, 2010). This resurgence in entrepreneurial spirit is a most welcome development. With amazing ingenuity, these businesses are introducing new products and services, adopting modern technologies, developing export markets and creating new jobs. In Ireland, entrepreneurs are now seen as desirable role models, modern patriots, wealth creators and job creators, attitudes which are supported and nurtured by society and its institutions. While most people associate enterprise with starting and managing one's own business, it is not confined to that. Enterprise and innovation are also important in established businesses, in all kinds of social and cultural organisations and in the public sector. It is clear from the literature that a favourable environment – political, social, economic and educational – is essential for the promotion of entrepreneurship (Cannon, 1991; Timmons, 1999). Attitudes, opportunities and rewards for successful enterprise are all important considerations. Entrepreneurs are influenced by the value system of their society. The enterprise environment is dynamic, with potential for policy-makers to influence change for the benefit of present and future generations. As Shakespeare wrote:

> Men at some time are masters of their fates;
> The fault, dear Brutus, is not in our stars,
> But in ourselves, that we are underlings.
>
> *JULIUS CAESAR* (1599), ACT 1, SCENE 2

The main objectives of Irish industrial policy are the development of indigenous enterprises, especially those with export potential; investment in and commercialisation of research and development; the attraction of inward investment; the creation of a competitive economy; and balanced regional development (National Development Plan, 2007–2013). Ireland wants more business start-ups, more survivals, more high-growth organisations, innovation from new and existing businesses, high productivity and growth in exports. This chapter sets the context for entrepreneurship in Ireland.

1.2 Economic development

This section briefly traces the development of the Irish economy from the era of protectionism to recent times under the following headings:

a) Protectionism
b) Free trade
c) Investment in education
d) Industrial economy
e) The Celtic Tiger
f) Recession and reorientation.

a) Protectionism

During and following the Great Famine in Ireland from 1845 to 1849, emigration took place on a massive scale. In the early twentieth century, an employment culture developed which cherished a safe, permanent, pensionable job in the public sector and sheltered private sector services like banking and the professions. Work in wealth-producing activities such as industry, agriculture, fisheries, horticulture, forestry and international services was not held in high esteem. The successful person was often the subject of envy and the prevailing attitudes were hostile to business. In this environment, many of Ireland's most entrepreneurial young people left its shores for countries which provided them with opportunities to earn their livelihoods. The society that emerged during the 1950s was one of economic stagnation, continual balance of payments crises, rising unemployment, massive emigration and a declining population. Inertia, apathy, cynicism and a general mood of despondency prevailed. The country had a small, insular manufacturing sector, catering almost exclusively for the home market, most of which was established behind the high tariff barriers imposed under the protectionist policy followed after 1932. Agriculture, then the dominant form of economic activity in the country and dependent on the British market alone for exports, was unable to generate income growth or halt the decline in employment (O'Hagan and Newman, 2008). The motive behind protectionism was to create a strong indigenous industrial base (similar to the approach taken by other economies), but it failed, leaving an anaemic, uncompetitive economy which retarded economic growth and enterprise. An open economy is now seen as a major driver of enterprise and this had been stifled.

b) Free trade

Dramatic changes in economic policy and performance followed the publication of a White Paper, *Programme for Economic Expansion*, on 12 November 1958. Now referred to as the *First Programme for Economic Expansion*, it was based on a celebrated report, *Economic Development*, prepared chiefly by T. K. Whitaker, Secretary of the Department of Finance. It became a milestone in Irish economic development. Its main strategies were the creation of economic growth by developing an export-orientated manufacturing sector in Ireland, changing industrial policy from protectionism to free trade, attracting foreign investment and the promotion of indigenous enterprise with various tax concessions, grants and subsidies. It was a seminal plan and marked the start of the modern industrialisation of Ireland. A number of development bodies had been established: the Industrial Development Authority (IDA) in 1949 to foster industrial development, Córas Trachtála in 1952 to promote exports, Gaeltarra Éireann (now Údarás na Gaeltachta) in 1958 to support employment creation in the Gaeltacht areas and the Shannon Free Airport Development Company in 1959 to promote development in that region. In a remarkable change of policy, most sections of the Control of Manufactures Acts 1932–1934 (legislation restricting foreign ownership of manufacturing companies) were replaced by the Industrial Development (Encouragement of External Investment) Act 1958, which introduced a range of incentives to be used to promote Ireland as a location for industrial development. The 1932–1934 Acts were completely repealed in 1964; thereafter, there were no restrictions on foreign ownership of industry in Ireland or on the repatriation of profits. Various tax concessions and generous grants to promote industrial development were introduced in the 1950s and early 1960s.

Economic growth exceeded all expectations during the period of the *First Programme for Economic Expansion* (1959–63). Confidence grew and Ireland formally applied for membership of the European Economic Community (EEC) as it was then called, now the European Union (EU), in 1962, but the application was withdrawn when President de Gaulle of France vetoed the United Kingdom's application in 1963. The *Second Programme for Economic Expansion*, covering the period 1964 to 1970, set a target growth rate of 4.2 per cent per annum, but dissatisfaction with progress led to the abandonment of the programme in 1968. A third programme, *Economic and Social Development*, 1969–72, ran its course. Tariffs were reduced unilaterally in 1963 and 1964, while the Anglo–Irish Free Trade Agreement was signed in 1965 and Ireland joined the General Agreement on Tariffs and Trade (GATT) in 1967. Over 500 new manufacturing industries, most of them export led, were established in Ireland during the 1960s, and they made a big contribution to the growth of the economy. These activities spawned several indigenous enterprises. Employment in manufacturing increased, emigration fell and the standard of living started to rise, with improvements in infrastructure, education, social conditions and healthcare. Protectionism gradually gave way to free trade, culminating in Ireland's membership of the EEC on 1 January 1973 (O'Hagan and Newman, 2008).

c) Investment in education

The highly influential report *Investment in Education*, published in two volumes in 1965 and 1966, recommended expansion and investment in education at all levels. Free post-primary education was introduced in 1967, a significant decision in the subsequent development of the country. Investment in education at all levels increased, especially at third level, with expansion in the existing universities, the opening of a network of regional technical colleges (now institutes of technology) in the 1970s and the establishment of the National Institute of Higher Education in Limerick in 1972 and another in Dublin in 1980 (both became universities in 1989). Investment in education was a major objective of public policy, aided by European Union funds. This investment in human resources created a national competitive advantage for the country and led to unprecedented growth towards the end of the twentieth century.

d) Industrial economy

The country changed quickly from an agricultural economy to an industrial one from the 1970s. In 1979 Ireland broke the link with sterling which had existed since 1826 and joined the European Monetary System (EMS) in an effort to reduce inflation (Haughton, 2008). Employment grew during the 1970s with numerous multinational companies established in the State. Because of heavy dependence on foreign firms, slow growth in indigenous industries, the cost of industrial development and the changing international climate, the Government asked the National Economic and Social Council (NESC) to carry out a fundamental review of industrial policy in December 1979, with a major part of the review undertaken by the Telesis Consulting Group. The Telesis report, with NESC comments, was published in October 1982 (NESC, no. 64). It recommended *inter alia* that priority should be given to the development of internationally traded indigenous industry, a more systematic programme for developing linkages between indigenous and foreign-owned firms, a reduction in grants offered to foreign firms and positive discrimination in favour of projects with 'desirable characteristics' such as key business functions located in Ireland, stand-alone projects and those with significant potential for linkages.

Ireland's economic performance during the early 1980s was poor, with no growth, balance of payments crises, high inflation, excessive Government spending and a large national debt. Profligate expenditure during the late 1970s and early 1980s led to continuous annual current budget deficits. Increased taxation and high interest rates further depressed demand and exacerbated the recession. Manufacturing employment declined, unemployment increased to 17 per cent of the labour force by 1987 and emigration was high. The national economic crisis called for a major reform of fiscal policy, which took root in 1987. Major cutbacks took place in State spending and a social partnership agreement between the Government, employers and trade unions provided tax reductions in return for wage moderation. Restoration of the public finances created an environment for macroeconomic stability and facilitated investment. There was a big increase in inward investment, especially from the United States, and EU Structural Funds to prepare Ireland for the single market were used constructively to aid State investment in infrastructure and education. Considerable improvement took place between 1987 and 1991, with economic growth averaging 4.7 per cent per year. Employment started to increase from 1989 and State finances were gradually brought under control.

The report of the Industrial Policy Review Group in 1992 (*A Time for Change: Industrial Policy in the 1990s*, the 'Culliton Report') supported the development of an export-orientated indigenous enterprise sector, with a spirit of self-reliance and a determination to take charge of our own economic future, and recommended lowering the cost and improving the quality of public utilities as well as reforming the taxation system. It also advised that policy should focus on all aspects of competitiveness, productivity and reforming the State agencies supporting industrial development. In 1993, Forfás was established as the State body with responsibility for policy advice on the development of enterprise, trade, science, technology and innovation, with IDA Ireland responsible for attracting inward investment to Ireland and Enterprise Ireland for promoting indigenous enterprises. While policy shifted towards the promotion of indigenous businesses, the attraction of foreign direct investment continued. New inward investment created numerous new enterprises, not only in low-cost assembly work but also in high-technology, knowledge-intensive operations.

e) The Celtic Tiger

Difficult international conditions slowed employment growth in the early 1990s, but from 1994 to 2002 there was a period of unprecedented growth. The performance of the Irish economy during the last decade of the twentieth century was astonishing by previous standards. By the dawn of the new millennium the country had achieved sustained and significant growth in output, exports and employment creation. Between 1989 and 1998, the total at work increased by 408,400 from 1,113,200 to 1,521,600, an increase of 36.7 per cent (Central Statistics Office, Quarterly National Household Surveys). Unemployment was reduced rapidly after 1994, despite an increase of about 3 per cent per year in the labour force arising from a natural increase, rising female participation and net inward migration. The unemployment rate fell from 15 per cent in 1993 to just under 5 per cent early in 2000. This increase in employment and drop in unemployment coincided with unprecedented levels of economic growth, with gross national product (GNP) growth averaging 7.5 per cent from 1994 to 1999 (CSO). The country approached full employment for the first time since independence and scarcity of labour became a problem in many sectors. This growth created buoyancy in State revenue, which led to healthy budget surpluses and facilitated major reductions in taxation over a number of years, giving those at work increased disposable incomes. Extra resources were also provided for education, healthcare and social welfare. In terms of living standards, the country had converged to the European Union norm, with gross national product per capita at about 95 per cent of the EU average, compared with less than 70 per cent in 1987. The world saw Ireland as the 'Celtic Tiger', a popular misnomer for Ireland's long-delayed economic development (Haughton, 2008; MacSharry *et al.*, 2000).

This transformation in the Irish economy came from the confluence of a number of factors: membership of the European Union, macroeconomic factors, fiscal policy, labour supply, high productivity and social partnership. Membership of the European Union was a major factor, opening access to new markets and reducing the country's bilateral dependence on the United Kingdom. Devaluation in 1993 resulted in significant gains in price competitiveness. The main macroeconomic reasons were a growth in global trade, favourable exchange rates up to 2000, low interest rates, attraction of foreign direct investment (FDI) and a big expansion in indigenous enterprises, many of which developed export markets (Haughton, 2008). This pro-enterprise environment was enhanced by prudent fiscal policies from 1987, which reformed public finances and introduced low corporate, personal and other taxes. Favourable demographics characterised by a high birth rate created a supply of skilled labour in the 1990s, and this led to an increase in employment without a corresponding increase in wages as demand for labour went up. This made the Irish economy particularly competitive in the 1990s and productivity increased considerably. Social partnership agreements from 1987 led to wage moderation, which, with lower personal taxes, led to higher take-home pay in real terms. Ireland enjoyed Objective 1 status for Structural Funds, which led to considerable investment with Irish matching funds in human resource development, various infrastructural projects and aid to the enterprise sector. More efforts were made to increase competition, extend customer choice, promote innovation and efficiency as well as deregulation in some enterprises. Ireland joined the single European currency when it was launched in 1999 (euro notes and coins were introduced in January 2002). These developments created an environment where business could flourish.

While all this was very impressive, it ignored the dual economies operating in Ireland: a dynamic, high-technology, high-growth, export-led multinational sector and a slower-growing, less export-orientated indigenous sector. By the year 2000 there were about 1,100 multinational companies operating in Ireland, especially from the US, employing over 124,000 staff in manufacturing, chiefly in electronics, information and communications technology (ICT), pharmaceuticals and healthcare, engineering and international financial services. The indigenous sector grew rapidly in the 1990s but not at the same rate as the multinational sector. According to Forfás surveys in 2003, there were 297,549 employed in companies supported by enterprise agencies, IDA Ireland, Enterprise Ireland, Shannon Development and Údarás na Gaeltachta (see Table 1.1).

There was a big increase in the country's manufacturing base and exports up to 2002 as well as a rapid expansion in internationally traded services. Employment growth led to the end of involuntary emigration and increased disposable incomes, and additional State revenue enabled social services to be improved. According to the Quarterly National Household Survey of the Central Statistics Office, there were 1,930,042 in the Irish workforce in 2006: 822,808 women and 1,107,234 men. Employment in the construction sector peaked at 284,600, or 14.7 per cent of total employment, by the end of 2006. There were 2.139 million in the workplace by the end of 2007, but much of the increase over the previous years came from part-time jobs. About 1.4 million of that figure worked in the services sector, or approximately two out of every three people at work. The Irish economy evolved quickly from agricultural dominance, to industry, to services. By the end of 2007 there were 334,700 foreign nationals at work in Ireland (Quarterly National Household Survey, 2008). According to census figures, the population of the State was 4.339 million in April 2007, compared with 3.626 million in 1996. While many indigenous enterprises developed export markets over the years, some began to extend their activities in overseas markets with outward direct investment (ODI) and by 2004, Irish investment outflow exceeded inflow for the first time. This trend is likely to continue (Forfás, 2007a).

Table 1.1: Agency-supported firms in manufacturing and internationally traded services, 2003

	Total	Indigenous	Foreign-owned
Number of firms	8,663	7,390	1,273
Number of full-time employees	297,549	147,895	149,654
Average number of employees per firm	34	20	118
Sales (€ mn) (2002)	99,341	23,588	75,753
Direct expenditure in the economy (payroll, procurement of Irish raw materials and services) (€ mn) (2002)	34,170	16,677	17,493
Exports (€ mn) (2002)	78,803	8,785	70,018

Source: Forfás Surveys 2003, published in the Enterprise Strategy Group report, *Ahead of the Curve* (2004)

f) Recession and reorientation

Price increases from 1999 and full employment led to wage inflation outside the national agreements and benchmarking awards in the public sector in 2001. This wage inflation, combined with the appreciation of the euro against sterling and the US dollar, led to a big decline in price competitiveness. Exports from manufacturing and employment in that sector fell. An independent central bank could have increased interest rates to curtail inflation, but by then Irish monetary policy was determined by the European Central Bank (ECB), which aggravated the Irish situation by reducing interest rates and fuelling the property bubble. The EU Stability and Growth Pact was devised to keep the finances of countries in the euro under control by ensuring that any Government deficit did not exceed 3 per cent of gross domestic product (GDP) and that national debt did not exceed 6 per cent. As a member of the euro zone, the option of devaluation to restore competitiveness was not available. From 2002 to 2007, growth in the Irish economy came from a booming construction sector and consumer spending, fuelled by cheap credit, reckless bank lending and 'light touch' regulation, with no regard to ethical considerations (Cooper, 2010; Ross, 2010). This was exacerbated by excessive Government expenditure, financed by unsustainable property-based taxation revenue and big consumer spending. In 2008 economic growth came to an abrupt halt due to the confluence of a number of factors, including the collapse of the sub-prime housing market in the USA during 2007 and the closure of Wall Street's Lehman Brothers in September 2008, which led to a global banking and credit crisis as inter-bank lending dried up, as well as the crumbling of the Irish housing and personal credit bubbles. This resulted in a swift and deep recession, with negative growth in Ireland, a huge reduction in State revenue, a big increase in unemployment, increased taxation, increased payments in welfare and a large deficit, breaching the EU Stability and Growth norms. The Government had to guarantee deposits and most of the debts in six Irish financial institutions on 30 September 2008 and later provide capital to keep the banks in existence. The National Asset Management Agency (NAMA) was established to take over most of the toxic debts of the Irish banks in an initiative designed to facilitate their recapitalisation and enable them to resume responsible lending. Pay was reduced in many private-sector organisations and across all of the public sector from January 2010, as levies on pay were imposed. The key fundamentals that had to be addressed were the banking crisis, the fiscal deficit, competitiveness, the maintenance and generation of employment opportunities as well as the creation of an environment for sustainable economic development. On 28 November 2010, it was announced that Ireland had agreed an €85 billion credit facility with the European Union, the European Central Bank and the International Monetary Fund (with €17.5 billion to be provided by the State) to avoid borrowing in the bond market for three years.

Ireland learned an expensive lesson: that it could not rely on sectors driven by domestic demand, such as construction, wholesale and retail operations and locally traded services, to generate economic growth and employment. Sustainable growth depends on the export of competitive goods and services. The Government has to create the conditions to ensure that the cost of doing business in Ireland is competitive for the enterprise sector. It is expected that increased economic activity will generate additional State revenue to reduce part of the fiscal deficit, with the remaining structural part to be addressed by cost reductions and increased taxation (ESRI, 2009). The Government's economic recovery report, *Building Ireland's Smart Economy* (2008), states:

> Future economic growth will depend on re-orientating the economy towards exporting goods and services. To achieve this we need to stimulate the growth of enterprise, take advantage of the significant potential from the development of the green economy, reduce the relative cost of doing business, continue investing in both labour and productive infrastructure, increase competition across the economy, attract high value added employment, guide the construction sector to a more sustainable growth path and address issues such as the cost and security of energy supply.

1.3 Role of small and medium enterprises (SMEs)

While the future attraction and retention of foreign direct investment will be important for Ireland, as will the development of large indigenous enterprises, a key aspect of industrial policy is the development of small and medium enterprises (Table 1.2).

Table 1.2: Classification of small and medium enterprises

Enterprise category	Headcount	Turnover	or Balance sheet total
Medium	< 250	≤ €50 million	≤ €43 million
Small	< 50	≤ €10 million	≤ €10 million
Micro	< 10	≤ €2 million	≤ €2 million

Source: European Commission (2008)

- A medium enterprise is defined by the European Commission as an enterprise which has fewer than 250 employees and either an annual turnover not exceeding €50 million or a balance sheet total not exceeding €43 million.
- A small enterprise is an enterprise which has fewer than 50 employees and either an annual turnover not exceeding €10 million or a balance sheet total not exceeding €10 million.
- An SME ceases to qualify as such if a large enterprise owns more than 25 per cent of its shares.
- A micro-enterprise is one with fewer than 10 employees and either an annual turnover not exceeding €2 million or a balance sheet total not exceeding €2 million.

By 2005, with a workforce of just over 1.9 million in the country, approximately 350,000 people were employed in the public sector, 109,000 in farming and the balance in the enterprise sector. According to the report of the Small Business Forum, *Small Business Is Big Business* (2006), there were over a quarter of a million small businesses in Ireland in 2005, employing fewer than 50 people each (Table 1.3).

Table 1.3: Number of enterprises by level of employment (2005)

Business size	50+ employees	20–49 employees	10–19 employees	2–9 employees	1 employee	Total
Number of businesses	7,000	4,000	6,000	85,000	131,000	233,000
Per cent	3.0	1.7	2.6	36.5	56.2	100
Number of employees	675,000	138,000	111,000	397,000	131,000	1,452,000
Per cent	46.5	9.5	7.7	27.3	9.0	100

Source: Report of the Small Business Forum (2006), *Small Business Is Big Business* (CSO data, March–May 2005)

There were 7,000 businesses with over 50 employees in each and a total of 675,000 people. Over half of those employed in the enterprise sector worked in small businesses (about 777,000 people). There were 131,000 businesses employing just one person each, mainly professional people and self-employed tradespeople; 85,000 employing between two and nine people; and 6,000 with 10 to 19 employees. Small businesses operated in all sectors of the Irish economy, with construction, the largest, employing about a quarter of the total. The other main sectors were wholesale and retail, business services, manufacturing industry, transport, communications, finance, education, health and other services.

Small businesses are dispersed around the country and supply a huge range of local services as well as contributing to the economic, social and cultural life of the local population. Small businesses are able to give excellent customised service and value, with many deciding to remain small and trade locally. However, many of these are now experiencing intense competition from bigger organisations and international competitors in retailing, professional services, hotels, restaurants, entertainment and other services. The internet has brought new competition and opportunities to many sectors. Small businesses have to maximise their efficiency, quality and productivity to survive. The small business sector has become an incubating ground for many enterprises with the ambition to grow and develop export markets. Enterprise Ireland is working closely with those businesses and many are very successful. These are enterprises with the potential to build technological capability, to innovate with research and development and to support the creation of high-value products and services. Many small and medium-sized businesses are now very innovative in the production and export of high value-added products in sectors such as software, medical devices, engineering, food and biotechnology.

The Report of the Small Business Forum (2006) recommended that the Government should adopt a national entrepreneurship policy focused on increasing the number of start-ups and especially increasing the number aspiring to high growth. This includes enhancing the culture to support entrepreneurship. In addition, the report identified a number of issues that need to be addressed if the small business sector is to realise its full potential, as shown below.

a) Issues that face growing businesses

- Difficulty in accessing finance, especially for the service sectors with few capital assets that do not qualify for support from the enterprise development agencies, as well as cash flow difficulties arising from long delays in payment
- Weak management capability
- Lack of innovation, both technological and non-technological
- Under-exploitation of information and communications technology.

b) Issues that face all small businesses

- Burdensome and costly compliance regulations in relation to tax, employment, accounts, companies, licences, statistics and trade-related issues
- Rising local authority charges, including a development charge towards the cost of local infrastructure, such as roads, water supply and sewerage
- Poor access to information and advice
- Inadequate infrastructure, including broadband connectivity, transport, energy (including cost) and waste management.

c) Issues that face start-ups

- Lack of a systematic approach to entrepreneurship.

1.4 Future business opportunities for Ireland

The Enterprise Strategy Group report, *Ahead of the Curve: Ireland's Place in the Global Economy* (2004), stated that:

> the nature of global trade is changing, and future economic development will be strongly influenced by:
> - The shift towards services as a major driver of gross domestic product (GDP) growth,
> - The increasing role of knowledge as a driver of economic development and an influencer of new products.

The report (p. 42) identified opportunities for indigenous enterprises and inward investment in internationally traded services across a range of sectors and activities, especially with regard to advances in technology and the new corporate tax rate of 12.5 per cent on all trading activities. The sectors considered to offer opportunities were education for international students; finance; healthcare; tourism; aviation; construction; engineering; environmental, professional, consultancy, agricultural and bloodstock services; and creative and maritime services. The report recommended promoting Ireland as a location for European headquarters of multinational companies, franchising, intellectual property, sales and marketing, shared and outsourced business processes, supply chain management and various services delivered electronically.

The Enterprise Strategy Group saw high-value manufacturing remaining a fundamental component of Ireland's enterprise environment. Their report stated that for organisations in Ireland to develop future market opportunities, they must complement their existing production and operational strengths with new capabilities:

- Developing expertise in international markets to promote sales growth

- Building technological and applied research and development (R&D) capability to support the development of high-value products and services.

The activities with potential are those where Ireland has or can develop competitive advantage, differentiation and critical mass, sourced by natural resources, research and clusters of companies with specific expertise. The report identified the following as sectors which could offer opportunities for further development (p. 45): agri-food, pharmaceuticals and biotechnology, information and communications technology, medical technologies and consumer goods with strategic use of design and high margins. The development of other productive activities such as marine and forest resources and alternative energies is also important. To compete and grow, Irish industry has to be creative, innovative, flexible and adaptable, with the capacity to develop scale and international markets in niche segments.

Locally traded services do not receive the attention they deserve despite the increasing number employed in these activities. The size and growth of employment in sheltered services is influenced by the productivity of wealth-creating, export-orientated enterprises in the country and by net disposable incomes. However, the competitiveness of wealth-creating activities in the market sector is influenced by the quality and price of services from the sheltered sector (those activities which do not, or cannot by their nature, compete in the international marketplace) and by the taxable base to support public services. The Enterprise Strategy Group report (2004) stated: 'through the promotion of competition and innovation, locally-traded services will contribute effectively to the future growth of enterprise'. The adoption of new technologies, innovation and customisation can create new opportunities for locally traded services, many of which have potential for internationalisation.

One of the success stories of the Irish economy in recent years has been the big growth in the export of services. Internationally traded services are now the main drivers of economic growth, accounting for 43 per cent of exports in 2007. These include services relating to general business activities; financial services; computing, especially software; tourism and travel. Services, both domestic and international, are now a huge part of the Irish economy. Employment in services is expected to increase significantly, especially those with the potential to trade at international level. It is predicted that market services will account for 70 per cent of Irish exports by 2025 (Fitzgerald *et al.*, 2008). There are many services where Ireland can provide a competitive advantage in international markets, based on knowledge, differentiation, low rate of corporate taxation, unique heritage, worldwide diaspora and good interpersonal skills. Many companies have the potential to add service components to their business products. A new research and development grant scheme is now available for private companies, administered jointly by Enterprise Ireland and IDA Ireland, with services eligible for the first time.

The Enterprise Strategy Group report (2004) recommended that industrial policy should focus on niche activities for development where Ireland is world class. It identified five areas which, if fully developed, could provide Ireland with competitive advantages: expertise in international markets; expertise in technology with product and service development; world-class skills, education and training; favourable taxation policies; and effective and agile Government response to the needs of enterprise. It listed four prerequisites for the development of the competitive advantages listed above: cost competitiveness, physical and communications infrastructure, innovation and entrepreneurship, and management capability. The report recommended dismantling the legislative shelters that restrict competition, prioritising investment in the National Spatial Strategy-designated gateways and hubs and re-energising the recommendations of the strategic management initiative for the *Delivery of Better Government* (1996). The entrepreneurial potential of immigrants is also huge with regard to their enormous contribution in the United States (*Innovation*, November 2007).

1.5 Knowledge economy

As traditional manufacturing declines, most advanced economies are interested in what are called 'sunrise industries' – knowledge-based, market-driven, high-technology enterprises. One of the major objectives of current Irish industrial policy is the creation of a knowledge economy based on research, development, innovation and commercialisation.

Research is creative work undertaken in a systematic manner to generate new knowledge. Future innovative developments in products and services will come from the generation and use of new knowledge. Francis Bacon once observed that 'knowledge is power' and Benjamin Franklin, one of the founding fathers of the United States, made a prescient comment in *Poor Richard* that 'an investment in knowledge pays the best dividends'.

Development means utilising the knowledge that comes from research. Innovation is the process of adapting new ideas to add value commercially and requires the capacity to access and use the available knowledge. This requires different skills from those of research. Innovation is influenced by talent for accessing the global pool of knowledge in a specific topic, connectivity, networks, absorptive capacity, experimentation and flexibility. Successful innovation involves adapting existing knowledge to specific needs, preferably based on some unique competitive advantage to ensure long-term sustainability. Businesspeople have to realise that catching up is far more difficult than staying ahead.

Commercialisation is the process of bringing products and services to the marketplace. As global competition increases and with some low-level activities transferring to lower-cost economies, Ireland has to find new sources of competitive advantage. The objective is that this will happen with the generation and commercialisation of new knowledge. Ireland is now part of a rapidly changing global village with numerous sources of new knowledge, where the challenge is to integrate the discovery and commercialisation of new knowledge for the benefit of society.

In 1999 the *Technology Foresight Ireland* report (ICSTI, 1999) recommended that investment in science should be substantially increased, which led to the establishment of the Programme for Research in Third-Level Institutions (PRTLI) and Science Foundation Ireland (SFI). With a generous donation from Atlantic Philanthropies (a US philanthropic body controlled by an Irish-American, Chuck Feeney) and State funding, the Programme for Research in Third-Level Institutions was established in 1998 by the Higher Education Authority (HEA) to enable the universities and institutes of technology to develop research infrastructures and programmes. It supports research in science, technology, engineering and social sciences, including business and law. Science Foundation Ireland was established in 2001 to finance research in two key disciplines: information communications technology and biotechnology. It also has a research frontiers programme for mathematics, science and engineering. Research funds were provided for PRTLI, SFI, Teagasc, the Marine Institute, Enterprise Ireland, the Environmental Protection Agency (EPA), the Health Research Board (HRB) and other organisations. Two research councils were established to promote research in third-level institutions: the Irish Research Council for Science, Engineering and Technology (IRCSET) and the Irish Research Council for Humanities and Social Sciences (IRCHSS). A number of Centres for Science, Engineering and Technology (CSETs) and Strategic Research Clusters (SRCs) were established with SFI funding to promote collaboration between higher education and industry. Under the Seventh EU Framework Programme for Research and Technological Development (FP7), a budget of over €50 billion was provided to promote European Union leadership in the global knowledge economy, with a big emphasis on collaboration.

The research vision for the country was expressed as follows in *Building Ireland's Knowledge Economy* (Forfás, 2004a):

> Ireland by 2010 will be internationally renowned for the excellence of its research and be at the forefront in generating and using new knowledge for economic and social progress, within an innovation-driven culture.

According to this 2004 report, about one-third of both foreign and indigenous enterprises in Ireland were active in research and development in 2001. Expenditure on research and development at 1.4 per cent of GNP was under the EU average of 1.9 per cent, 2.7 per cent in the US and 3.1 per cent in Japan. Businesses were advised to recognise the value of research and innovation, both of which were seen as essential for survival and sustainability. The State would like to see far more enterprises active in research and development. A government report, *Strategy for Science, Technology and Innovation 2006–2013* (Government Publications, 2007b), identified the need for increased numbers with research qualifications, to double the number of PhD graduates (from a base of 647 in 2003), with a significant increase in research capacity, as well as investment in fourth-level education and the public research system. The State committed €8.2 billion for investment in research under the *National Development Plan 2007–2013* (NDP) and in the *Strategy for Science, Technology and Innovation 2006–2013*. This investment was spread across a number of programme areas to create world-class research in science, technology and innovation. The research is focused on core competences in specific technologies where Ireland has expertise and advantages: food processing, computers, electronics, pharmaceuticals, biopharmaceuticals, life science, energy, marine, geosciences, medical device engineering and the environment. The European Union's Lisbon Strategy 2000–2010 set an objective of establishing the most competitive and dynamic knowledge-based economy in the world. It agreed a target of 3 per cent of GDP for gross expenditure on R&D by 2010. Ireland's target was 2.5 per cent of GNP by 2010, with two-thirds of this to come from the private sector (Forfás, 2004a).

According to the report *Building Ireland's Knowledge Economy*:

> sustained investment in R&D is an essential foundation to maintain the competitiveness of the enterprise base and to develop Ireland as a knowledge based society, so as to increase productivity growth, provide a source of opportunity in new growth areas and to develop a base for creating knowledge driven competitive advantage across sectors of the economy.

The objective of this huge investment in research, which represents a paradigm shift in State policy, is to turn it into commercial value for the Irish economy. Taxpayers will expect a return for this investment. It is essential that research and development in higher education are aligned with the business sector to root this talent base in Ireland and provide a vital link in the innovatory process, as well as making the country more attractive for foreign direct investment. Problem-solving and developing new ways of undertaking activities are an integral part of the process. There is also enormous potential for the application of new knowledge and technologies in services. Inventions, innovation and commercialisation originate from many sources and this diversity has to be respected and supported. The educational experiences from first to fourth levels, as well as the economic, social and cultural environment, are important factors. A culture of exploration, experimentation, creativity, critical thinking and innovation has to be fostered at all levels of education as well as in business and society. A knowledge-based society requires lifelong learning, wide diffusion of knowledge, exploration and innovation. Bradley and Kennelly (2008) see huge potential for future competitiveness in 'a marriage of capability, creativity, innovation, culture, identity and sense of place'. According to the Government's report, *Building Ireland's Smart Economy* (2008), a key feature of its approach is

> building the innovation or 'ideas' component of the economy through the utilisation of human capital – the knowledge, skills and creativity of people – and its ability and effectiveness in translating ideas into valuable processes, products and services. A second important aspect is the greening of the economy and the development of green enterprise.

This policy has research, innovation and commercialisation at its core, which the report states 'will be the successful formula for the next phase of the development of the Irish economy'. The smart economy is not only about research and new products, it is chiefly about innovation in every aspect of a business. It is dependent on smart people with good business ideas, innovation and enterprise. Ireland wants people that can respond to this challenge in the spirit enunciated by President John F. Kennedy in his inaugural address on 20 January 1961: 'Ask not what your country can do for you – ask rather what you can do for your country.'

The report of the Innovation Taskforce, *Innovation Ireland* (2010), listed six principles as fundamental to creating an ecosystem in which each element, and each interaction, supports innovation across the economy and society. These are:

1. The entrepreneur and enterprise must be at the centre of our efforts.
2. Establishing, attracting, growing and transforming enterprises must be the focus of a coherent national effort.
3. Availability of smart capital is crucial for starting, growing and transforming enterprises.
4. An education system which fosters independent thinking, creativity and innovation is vital to achieving the smart economy.
5. The State should actively accelerate success by encouraging flagship projects and by prioritising the provision of excellent infrastructure.
6. We must sharpen the focus of our national research system to target areas of potential strategic and economic advantage for Ireland.

It is expected that a strong knowledge-based economy together with innovation in the traditional production sectors, based on natural resources and competitive advantage, and growth in internationally traded services will provide the resources to make continuous improvements in infrastructure and public services as well as the creation of a society based on social cohesion and a good quality of life.

Irish aspirations are in line with EU policy as outlined in the *Europe 2020* strategy (European Commission, 2010). This strategy has three mutually reinforcing priorities:

- Smart growth: Developing an economy based on knowledge and innovation.
- Sustainable growth: Promoting a more resource-efficient, greener and more competitive economy.
- Inclusive growth: Fostering a high-employment economy delivering social and territorial cohesion.

Technology transfer

Technology transfer has been defined as:

> a formal transferring of new inventions, creations, discoveries, innovations, processes and the like which result from scientific research conducted at public research organisations to a commercial environment.

This definition came from the *National Code of Practice for Managing and Commercialising Intellectual Property from Public–Private Collaborative Research* (ACSTI, 2005), which was published to help develop clear policies for all parties in the technology transfer process. In the past Ireland's base in high technology came from external licences, but in the future, it is hoped that some will originate from the transfer of knowledge generated in the country. The terms of knowledge transfer agreements have to be reasonable to ensure commercialisation. Forfás (2004a) stated:

> The production of primary research information is not the end but the beginning of a process that continues until the usefulness of that information is realised. The commercialisation of research and knowledge for Ireland's economic benefit through intellectual property management and technology transfer needs to be a priority for all higher education and public research institutions and it is essential that institutes establish strong capabilities in this regard.

In the past the emphasis in research was on discoveries and getting published in learned journals, but now there is also a strong commitment to commercialisation. Commercialisation in this context is the use of intellectual property to bring new products and services to the marketplace though one's own business or by licensing agreements with other organisations. The new knowledge created has to be used for the benefit of society, to enhance competitiveness, to promote growth, employment and living standards as well as improve the quality of life in terms of health and the environment. Maximising the returns from investment in research is crucial to Ireland's economic, social and cultural progress. With support from Enterprise Ireland, technology transfer offices were established at some higher education institutions to promote patents, licences, technology transfer and the establishment of spin-off companies. It is expected that regional alliances and industrial clusters will develop to share resources, expertise, training, transnational networks and to leverage economies of scale (Cunningham and Harvey, 2006). The objective is to establish knowledge-intensive clusters of enterprises.

Enterprise Ireland has various funding programmes in place to facilitate research and development as well as commercialisation of new technologies, for example innovation vouchers, proof of concept (to explore commercial potential), technology development (more focused market-driven approach), commercialisation plans (to increase commercial value) and innovation partnerships (collaboration between business and higher education to find solutions to problems). The patent fund provides financial aid for higher education institutions to protect intellectual property. Enterprise Ireland also has a growth fund to help small and medium enterprises to increase competitiveness through business innovation.

Business incubation centres

The concept of business incubation centres originated in the United States and from the 1980s many were established on the campuses of universities, which resulted in numerous spin-off high-technology companies. In Ireland, Enterprise Ireland has funded the establishment of business incubation centres at all higher education institutions and some in collaboration with community groups, known as Community Enterprise Centres, to facilitate the formation of viable, sustainable enterprises with the potential to develop export markets. These centres provide dedicated high-quality, fully serviced office space at reduced rent for aspiring entrepreneurs to develop their projects for commercialisation during a specific period, after which they are expected to leave and secure their own facilities. The business incubation centres provide technologically advanced telephone, internet and broadband services as well as access to a wide range of support services, business mentoring and networking opportunities. According to the Enterprise Strategy Group (2004), educational institutions have a third role after education and research: the promotion of enterprise. They state:

> The exploitation of knowledge and commercialisation of research must become embedded in the culture and infrastructure of the higher education system. This requires continued emphasis on new

> campus company start-ups, a pro-innovation culture of intellectual property protection and exploitation, programmes in entrepreneurship, consulting services, information services, new forms of graduate development programmes and greater links between higher education institutions and private enterprise.

Several successful companies have emerged from third-level campus incubation centres, including Baltimore Technologies, Trinitect, Q Set and Andor Technology, but the best-known company became Iona Technologies, a software company which was successfully floated on the NASDAQ stock exchange in 1997 and at its peak had a market capitalisation of over €1.5 billion. Founded by three academics from Trinity College, Dublin – Dr Chris Horn, Annrai O'Toole and Dr Seán Baker – it operated as a campus company from 1991 to 1993 and originated from a European Union-funded information technology research programme known as ESPRIT. Iona Technologies became one of the first campus companies in Ireland to commercialise their research. It was sold in June 2008 to an American software group for €103.8 million. (*Irish Times*, 2008).

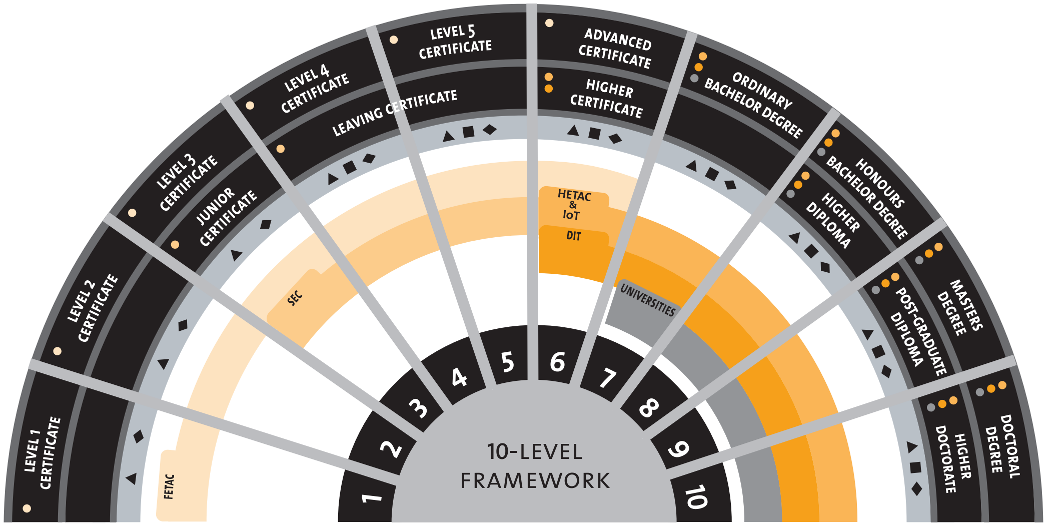
1.6 Future skills needs

In a knowledge economy it is the learner who will inherit the future. Prior to the start of the recession in 2008 there were predictions that the country would need a big increase in the size of its workforce and that considerable upskilling was required.

Tomorrow's Skills: Towards a National Skills Strategy, the report of the Expert Group on Future Skills Needs (2007), stated that the Irish economy would be likely to require 950,000 extra workers between 2006 and 2020. These were expected to come from the school leaving cohort (640,000), through increased participation and inward migration (310,000). The Group's vision for Ireland by 2020 is a 'well-educated and highly skilled population contributing optimally to a competitive, innovation-driven, knowledge-based, participative and inclusive society'. The Expert Group concluded that if Ireland is to realise its vision of a new knowledge economy which can compete in international markets, the following educational objectives had to be achieved by 2020:

- That 500,000 in the workforce progress by at least one level on the national framework of qualifications established by the National Qualifications Authority of Ireland (NQAI) (Figure 1.1)
- That 48 per cent of the labour force have qualifications at levels 6 to 10
- That 45 per cent have qualifications at levels 4 and 5
- That the remaining 7 per cent should have qualifications at levels 1 to 3
- That the retention rate at Leaving Certificate should reach 90 per cent
- That the progression rate to third-level should increase from 55 per cent to 72 per cent.

Figure 1.1: The national framework of qualifications



AWARDING BODIES

- FETAC - Further Education and Training Awards Council
- SEC - State Examinations Commission *(Department of Education & Skills)*
- HETAC - Higher Education and Training Awards Council
  IoT - Institutes of Technology *(make their own awards at specified levels under Delegated Authority from HETAC)*
- DIT - Dublin Institute of Technology
- Universities

AWARDS IN THE FRAMEWORK

There are four types of award in the National Framework of Qualifications:

- **Major Awards:** are the principal class of awards made at a level
- **Minor Awards:** are for partial completion of the outcomes for a Major Award
- **Supplemental Awards:** are for learning that is additional to a Major Award
- **Special Purpose Awards:** are for relatively narrow or purpose-specific achievement

Source: National Qualifications Authority of Ireland

Figure 1.1 illustrates the 10 levels in the national framework of qualifications and shows the various awarding bodies whose awards are included in the framework. Most HETAC qualifications in Institutes of Technology are now awarded by each one under delegated authority granted in accordance with section 29 of the Qualifications (Education and Training) Act 1999. The unexpected economic developments of 2008 changed the Expert Group's projections and the eventual situation will depend on the depth and length of the recession.

1.7 *National Spatial Strategy*

The State is committed to balanced regional development. The first major report on regional planning in Ireland was the controversial Buchanan Report in 1968, which recommended the establishment of a small number of growth centres. This was far from popular and led to the publication of IDA Regional Industrial Plans in 1973 which supported the dispersal of economic development. The first industrial estates were established in Galway and Waterford in the early 1970s, and others followed in Dublin, Limerick and Cork. As these centres developed and rural areas declined, there were demands for better balanced development which, it was accepted, would not be achieved by market forces alone. Diseconomies arose from the huge growth in and around Dublin with inflated house prices, energy costs, long commuting times and a big deterioration in the quality of life. A National Spatial Strategy (NSS) was launched in 2001 to promote more balanced regional economic, social and physical development, to be achieved through 'engines of growth' known as gateways and hubs. Gateways are strategic locations with a critical mass of population, economic base, support services and infrastructure which have the capacity to promote development throughout their surrounding regions. The nine gateways selected were Dublin, Cork, Limerick, Shannon, Galway, Waterford, Dundalk and Sligo. In addition, Letterkenny/Derry and Athlone/Tullamore/Mullingar were designated 'linked gateways' to work together to promote regional development in these areas.

Hubs are designed to support the role of gateways and the development of smaller towns as well as the surrounding rural areas. The hubs named were Cavan, Ennis, Kilkenny, Mallow, Monaghan, Tuam and Wexford. In addition, Ballina/Castlebar and Tralee/Killarney were designated 'linked hubs' to work together to develop their areas. In the following decade little was done to support the diversified spatial strategy. An increasing population is expected to result in more urbanisation, high-rise buildings and considerable investment in the supporting infrastructure, with density dividends, which requires good long-term spatial planning (Coleman, 2007). It is envisaged that SMEs will make a major contribution to balanced regional development in the country, especially with the use of modern communications technologies.

1.8 State support for Irish enterprise

The functions of the main State organisations and other bodies which provide support and assistance for Irish business are outlined below, with the year of the organisation's establishment shown in brackets. They are classified as follows:

a) Industrial/commercial support and assistance
b) Education and training
c) Research
d) Community development
e) Others.

a) Industrial/commercial support and assistance

- **Forfás** (1993) is the State agency responsible for policy advice on the development of enterprise, trade, science, technology and innovation in Ireland as well as advising and co-ordinating IDA Ireland, Enterprise Ireland and Science Foundation Ireland in respect of their functions. (www.forfás.ie) The Advisory Council for Science, Technology and Innovation (2005) operates under the aegis of Forfás. It provides advice and develops policies on science, technology and innovation. (www.sciencecouncil.ie)

- **IDA Ireland** (1993) is responsible for attracting inward investment to Ireland in manufacturing and internationally traded services as well as promoting the expansion of existing operations located here. (www.idaireland.com)
- The mission of **Enterprise Ireland** (1998) is 'to accelerate the development of world-class Irish companies to achieve strong positions in global markets resulting in increased national and regional prosperity'. It assists companies engaged in manufacturing and internationally traded services employing 10 or more and new enterprises with growth potential. It is particularly interested in start-up businesses with high potential. A high-potential start-up company (HPSU) is defined by Enterprise Ireland as one which:
    - has a product or service based on technological innovation
    - is likely to achieve significant growth in three years (sales of €1m per annum and employment greater than 10)
    - has projected sales with a big export orientation
    - is ideally led by an experienced management team with technical and commercial competencies.

  Enterprise Ireland can provide various types of funding: grants, repayable grants, equity, redeemable preference shares, research and development finance and innovation grants. (www.enterprise-ireland.com)
- **Shannon Development / Shannon Free Airport Development Co. Ltd** (1959) is a regional development agency in the mid-west region with special responsibility for managing the Shannon Free Zone, promoting tourism and other key strategic projects like the E-towns initiative, Shannon Broadband Ltd and Knowledge Network Locations. (www.shannondevelopment.ie)
- **Údarás na Gaeltachta** (1980) is a regional development body responsible for the promotion of economic, social and cultural development of the Gaeltacht regions so as to encourage the preservation and promotion of the Irish language. Údarás-supported projects include industrial, tourism, aquaculture, audio-visual activities, natural resource-based enterprises and community development initiatives. (www.udaras.ie)
- **City and County Enterprise Boards** (1993) are the first point of contact for start-up and micro-enterprises with fewer than 10 employees. They can provide a feasibility study, employment and capital grants. There are a total of 35 City and County Enterprise Boards and they are key elements of State strategy to generate more balanced regional development.
- **Bord Iascaigh Mhara** (Irish Sea Fisheries Board, 1952) has responsibility for the development of the sea fish industry, aquaculture and the diversification of the

coastal economy so as to enhance employment and income. (www.bim.ie)

- **Business Innovative Centres** (BICs, 1988) were established in Dublin, Cork, Limerick and Galway to provide support for innovative start-up and early-stage enterprises in the medium to high-technology sector. Supports include training, feasibility studies, incubation assistance, business planning and access to a network of contacts. They have a seed capital fund and also manage the business angels programme on behalf of Enterprise Ireland and InterTrade Ireland.
- **An Bord Bia** (Irish Food Board, 1994) aims to work in partnership with industry in the promotion of Irish food, drink and horticulture nationally and internationally. (www.bordbia.ie)
- **Fáilte Ireland**, established in 2003 from the merger of Bord Fáilte Éireann and CERT, is the national tourism development authority. Working with the industry, it provides strategic and practical support to develop and sustain Ireland as a high-quality competitive tourist destination. (www.failteireland.ie)
- **Tourism Ireland**, established under the framework of the Belfast Agreement of Good Friday 1998, is responsible for marketing the island of Ireland as a premier tourist destination. It is jointly funded by the two governments and is accountable to the North/South Ministerial Council. (www.tourismireland.com/corporate).

b) Education and training

- **Educational institutions** (universities and institutions of technology).
- **FÁS** (Foras Áiseanna Saothair, the State Training and Employment Authority, 1988) provides a wide range of training and employment programmes to all sectors of industry and commerce, an employment recruitment service, an advisory service to industry and various community development programmes. It is also responsible for the national trades' apprenticeship scheme, the One Step Up and Reaching into the Workforce initiatives for upskilling staff. (www.fas.ie)
- **HEAnet** is Ireland's national education and research network, providing internet services to staff and students in Irish universities, institutes of technology and other educational and research bodies. It provides connectivity to other networks in Ireland and around the world. (www.heanet.ie)
- The **National Centre for Partnership and Performance** was established in 2001 to lead and support change and innovation in the Irish workplace. (www.ncpp.ie)
- **Skillnets** (1999) is an industry-led body that organises and provides support for learning networks of small and medium-sized enterprises.

c) Research

- **Higher educational institutions** (universities and institutions of technology).
- **Science Foundation Ireland** (SFI) was established in 2001 to manage an investment

fund to support basic research likely to generate new knowledge, state-of-the-art technologies and competitive enterprises in strategic fields relevant to Ireland's industrial and economic development, especially biotechnology and information and communications technology. It was given responsibility for investing €1.4 billion during the lifetime of the *National Development Plan 2007–2013*. (www.sfi.ie)

- The **Embark Initiative** forms a portfolio of research-funding programmes operated by the Irish Research Council for Science, Engineering and Technology (IRCSET). These programmes support the education of researchers and the development of their early careers. The emphasis is on innovative, original and exploratory research to promote Ireland's growth, development and competitiveness. (www.embark.ie)
- The **Health Research Board** promotes and supports research on health matters in Ireland. (www.hrb.ie)
- The **Irish Research Council for the Humanities and Social Sciences** (IRCHSS) was established in 2000 to promote research in the humanities and social sciences in the third-level sector. (www.irchss.ie)
- The **Marine Institute** promotes research and development in the marine sector. (www.marine.ie)
- **Teagasc** (1988) provides an integrated research, advisory and training service for agriculture, the food industry and rural development. (www.teagasc.ie)
- The **Higher Education Authority** (HEA) was established in 1971 to further the development of higher education in Ireland.
- The role of the **Environmental Protection Agency** (EPA) is to protect the environment. It regulates the licensing and control of large-scale waste and industrial activities to ensure that they do no harm to the environment nor endanger human health. It also sponsors research on various environmental issues. (www.epa.ie).

d) Community development

- The **Western Development Commission** was established in 1999 under the Western Development Commission Act 1998 to foster integrated economic and social development in seven counties, all of Connacht as well as Clare and Donegal. It prepares policy documents, promotes strategic initiatives in various sectors and operates the Western Development Commission Investment Fund, which can provide equity and loan capital for projects deemed to be commercially viable. (www.wdc.ie)
- **Area partnership Companies** (1990) were established to counteract disadvantage in certain areas of long-term unemployment, poverty and social exclusion. They give grants for approved projects. Community development in this context refers to a process through which local community life is enhanced by a wide variety of activities focused on anti-exclusion measures and capacity building.

- **LEADER** companies (1991) originated with an EU initiative to promote integrated rural development. Their mission is to facilitate new approaches for integrated sustainable rural development. They provide public funding for the implementation of multi-sectoral plans to develop specified areas. All companies operate as autonomous bodies in accordance with their agreement with the Department of Community, Equality and Gaeltacht Affairs. (www.irishleadernetwork.org)

e) Others

- **InterTrade Ireland** (1999) is a cross-border body established under the Belfast Agreement to increase the number and value of all-Ireland trade and business networks. (www.intertradeireland.com)
- The **Arts Council** is responsible for developing the arts in Ireland. It provides grants to artists, arts organisations and other groups to promote the arts. It also provides advice and information on the arts to the Government as well as to a wide range of individuals and organisations. (www.artscouncil.ie)
- The **Irish Film Board** (Bord Scannán na hÉireann) has a responsibility to develop and support the Irish film industry as well as promote Ireland as a location for international film and television production. (www.filmboard.ie)
- The **Competition Authority**'s role is to enforce competition law, adjudicate on mergers and promote competition in general for the benefit of consumers. (www.tca.ie)
- The **Crafts Council of Ireland** (1976) is the national design and development organisation for the craft industry in Ireland. (www.ccoi.ie)
- The **Digital Hub Development Agency** was established to create an international digital enterprise area in Dublin. (www.thedigitalhub.com)
- The **National Competitiveness Council** (1997) reports on key issues relating to competitiveness in the Irish economy and makes recommendations for improvements. (www.competitiveness.ie)

Other organisations supporting entrepreneurs

- **Chambers Ireland** represents the interests of all Chambers of Commerce operating in Ireland. (www.chambers.ie)
- The **Small Firms Association** (SFA) is an independent association within the Irish Business and Employers Confederation representing and supporting small businesses. (www.sfa.ie)
- The **Irish Small and Medium Enterprises Association** (ISME) represents and supports small and medium-sized enterprises. (www.isme.ie)
- **Plato Ireland Ltd** provides support for SMEs exploring growth and expansion.

1.9 Summary

Enterprise is essential for the economic, social and cultural development of any nation. Ireland is developing rapidly as an enterprising society. The main objectives of Irish industrial policy are the development of indigenous enterprises, especially those with export potential, investment in and commercialisation of research and development, attraction of inward investment, the maintenance of a competitive economy and balanced regional development.

The Irish economy has evolved from protectionism to free trade, the industrial economy, the Celtic Tiger, to the recent recession. The small and medium-sized enterprise sector is crucial to continued progress. One of the major objectives of current Irish industrial policy is the creation of a knowledge economy based on research, development, innovation and commercialisation. There is now considerable investment in research through State bodies and the private sector. The new knowledge created must be used for the benefit of society, to enhance competitiveness and to promote growth, employment and living standards. The links in this process are research, development, technology transfer and commercialisation.

To cater for the expected growth of the economy, the report of the Expert Group on Future Skills Needs (2007) recommended a big increase in the workforce and ambitious targets for upskilling, but their projections have to be adjusted in light of the depth and length of the recession which started in 2008. It is State policy that there should be balanced regional development in the country, supported by the National Spatial Strategy.

Questions

1. Discuss the main developments in the Irish economy since 2000.
2. What recommendations would you make for the promotion of small and medium enterprises?
3. What do you understand by the knowledge economy?
4. Explain what is meant by technology transfer.
5. Using the internet, establish the current assistance available for those seeking to establish an internationally traded service in Ireland.