

Chapter

3

A New Strategic Direction

3 A New Strategic Direction

The challenge for Ireland in the next decade is to build distinct competitive advantages that will sustain high living standards in the face of intense global competition. The key to success lies in building knowledge and expertise to achieve leadership positions in our target markets.

This Chapter describes the types of companies that will thrive in the years immediately ahead, the types of new companies that will emerge, the key differences between successful companies today and those of tomorrow, and the new ways in which companies will collaborate for mutual advantage.

Ireland's Diverse Enterprise Base

Ireland's economic success of the past decade was sustained by an enterprise base with three distinct components:

- » Subsidiaries of foreign-owned companies trading internationally
- » Indigenous companies trading internationally
- » Companies trading locally.

The performance of each of these three components is dependent to some degree on the performance of the other two, and over the next decade that interdependence will increase. Each component has an important role to play in Ireland's economic development, and the 10 year strategy set out in this report seeks to maximise the contribution of each.

Opportunities

There are new areas of opportunity that are opening up, and that will play a significant role in Ireland's economy over the next decade. They fall into three broad categories:

- » **Internationally-traded services:** As international trade in services increases, there are emerging opportunities in a range of sectors and activities where Ireland has existing expertise. Ireland's corporation tax regime⁶⁹ is particularly favourable for the expansion of services activities
- » **High value-added manufacturing:** As our proven expertise in production and operations is integrated with knowledge-based activities such as R&D, marketing, customer relations management and sales, high value-added manufacturing will continue as a fundamental component of Ireland's enterprise base

69 Ireland's corporation tax rate of 12.5% applies to all traded activities, which presents significant potential to pursue new opportunities across a wide range of service activities (most of which were previously subject to a higher rate of corporation tax, which was progressively reduced from 40% beginning in 1998).

- » **Locally-trading businesses:** Locally-trading businesses will thrive over the next decade in a more competitive environment, as they apply innovation and best practice to their businesses. Efficiency in this sector will help to reduce the cost base of the internationally-trading sector.

A number of areas of specific opportunity for Ireland are explored in more detail on the CD-ROM accompanying this report. They include:

- » Realising the relatively underdeveloped international opportunities of service sectors such as education, healthcare, creative services and maritime services, and maximising the potential of services delivered electronically
- » Capitalising on the emergence of new global business models, such as supply chain management, exploitation of intellectual property, outsourced business processes, regional headquarters and centralised corporate support services
- » Developing our existing strengths and expertise in biopharmaceuticals, ICT, medical technologies, engineering and consumer products, and building on the success of natural resource-based sectors, such as food and tourism.

Ireland is a small country, and cannot be first or best in every field of activity: we have to focus. Enterprise in Ireland will succeed by focusing on and reinforcing those niche areas of activity where it has, or can build, sustainable competitive advantage. These areas can evolve from a number of sources, including natural resources, research excellence, market knowledge and groupings of companies with specific expertise.

Realising the Potential

Identifying and exploiting opportunities will require enterprise to develop further strengths in two particular areas:

- » **In-depth knowledge of markets and customer needs**
- » **The ability to develop high-value products and services to satisfy those needs.**

While Ireland can boast pockets of excellence in these areas, and some exceptional international enterprise successes, a significant proportion of Ireland's capability is in production and operations which is not balanced by expertise in markets and technology.

To develop the required knowledge of markets and customer needs, companies need a well-developed system of market intelligence that encompasses knowledge of sectoral developments, competitor positioning, technological advances, and regulatory changes. They also need to build strong relationships with individual customers, in which they develop a comprehensive understanding of the customers' businesses and their problems, so that they can sell them solutions that meet or exceed their expectations.

In the years ahead, growth will come from goods and services that incorporate original knowledge about customers and their businesses, and about new technology, techniques, materials, processes and delivery methods. While the recent increased investment in basic research capability is welcome, we now need a similar emphasis on applied research by companies, so that they can develop innovative products and services that satisfy customer needs.

The role of **enterprise-led networks** will become progressively more important as a mechanism to drive the development agenda and provide services to companies. Over time, a higher proportion of state support is likely to be delivered to networks focusing on developing sectoral expertise and enabling Ireland to become a global centre of excellence in niche areas.

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3.1 Specific Growth Opportunities

There are a number of areas where Ireland has considerable potential for future growth, building on existing expertise and capitalising on new opportunities arising from a global business environment. These include opportunities in internationally-traded services, high-value manufacturing in a number of sectors and locally-trading businesses. (Locally-trading businesses are discussed to the extent to which they contribute to and support internationally-trading activities).

The highlighting of such opportunities should not be interpreted as an attempt to pick winners. Rather, this strategy aims to ensure the state quickly and pragmatically responds to what is working well and to reinforce it. This approach of industry self-selection rests on the ability to secure early and good intelligence from the marketplace.

3.1.1 The Increasing Importance of Services

Over the period to 2015, internationally-traded service activities will become increasingly important for indigenous and foreign-owned operations in Ireland. Growth in the sector will be driven by reduced barriers to trade, advances in communications technology, and Ireland's corporation tax regime.

The contribution of services to GDP and employment has increased substantially in all developed economies; the services sector is now the fastest growing sector in these economies.⁷⁰ Developments within the WTO and EU have resulted in a reduction in barriers and enhanced opportunity for international trade in services. The Internet facilitates the remote provision of services and reduces the need for face-to-face delivery.

Ireland has a strong track record in capturing foreign direct investment in service activities, including financial services, customer contact centres, shared services, and more recently, data centres and eBusiness related activities. There are also some indigenous services firms trading internationally, for example in health, education, construction, tourism and software.⁷¹

However, the recent extension of the 12.5% corporation tax rate to all traded activities presents Ireland with a new opportunity to target foreign direct investment in a much wider range of service sectors and activities. Ireland also has the advantages of being native English-speaking with some foreign language capability, and has competitively priced international broadband connectivity.

In the development of this report a wide range of service activities was reviewed in terms of their potential for internationalisation. More than 80 industry participants subsequently considered a short-list, assessing specific opportunities, global trends, the potential for growth (either through employment or wealth creation) and Ireland's existing strengths and capabilities. They outlined specific initiatives they feel are required to address issues and realise optimum potential. PwC Consultants were also commissioned to assess services opportunities arising specifically from the introduction of the 12.5% corporation tax rate to all traded activities.

⁷⁰ OECD, *OECD in Figures, 2003*.

⁷¹ *Software development has been included in the ICT Report, included on the CD-ROM.*

The following sectors and activities were considered to offer opportunities for exploitation by indigenous enterprises and for increased inward investment:

Service Sectors

Education Services

Financial Services

Healthcare Services

Tourism

Creative Services

Maritime Services

Aviation Services

Construction, Engineering and Environmental Services

Professional and Consultancy Services

Agricultural and Bloodstock Services

Service Activities

European Headquarters

Franchising

Intellectual Property

Sales and Marketing

Shared and Outsourced Business Processes

Services Delivered Electronically:

– eRetailing of Consumer Goods

– eServices

– Data Management

Supply Chain Management

The potential for Ireland in these sectors and activities is described further on the CD-ROM accompanying this report and the education services sector is profiled as an example. The inputs on the CD-ROM informed the work of the Enterprise Strategy Group and helped shape its analysis and recommendations.

Internationally-traded Services: An example

Developing the Internationally-traded Education Services Sector

Worldwide, there are about 1.6 million students enrolled in higher education outside their home country. These account for the largest share of the US\$30 billion market in international education services. Although the UK, US, Germany, France and Australia dominate the market – catering for 70% of the overseas student total – there is still significant opportunity for Ireland to capture a share of this high growth sector. Future growth in the sector is likely to be driven by a number of factors, including the emergence of new markets (including China, Russia and Eastern Europe), increased student demand and the evolution of eLearning.

Ireland already has some experience in this area. In 2001, Ireland's higher level educational establishments earned y161 million catering for 9,300 students, and approximately 100 private companies generated revenues of y340 million, mainly by providing courses in English as a foreign language. Ireland's strengths include:

- » Native English-speaking
- » Perception as a desirable place to work, learn and live
- » International academic reputation in higher education
- » Technology expertise in development and delivery of eLearning solutions.

In countries that have been most successful in developing the sector, overseas students represent about 15% of the total student population; in Ireland, they represent about 7%. The more successful countries have also been proactive in developing the sector, focusing on quality, regulation and co-ordination, whereas Ireland's sector has grown in a less structured way to date.

In order to realise the potential of new markets and increased demand, a number of actions will have to be taken by the education providers and the state agencies. These include managing quality assurance and regulation, marketing the sector, developing an efficient visa system and raising awareness of cultural differences. (These are dealt with in more detail on the CD-ROM accompanying this report.)

The Department of Education and Science is currently in the process of developing and agreeing a national policy, strategy and framework to cover both private and public sector providers and this initiative is welcomed.

In addition to the direct economic benefits of the industry, the propagation of Ireland's reputation as an educational centre and the creation of an international body of alumni would support the marketing of Ireland and its businesses abroad.

3.1.2 High-value Manufacturing

The manufacture of high-value products will continue to be a key component of Ireland's enterprise base. Building on our existing production strengths, manufacturing companies should become increasingly involved in applied research, in new product introduction, and in managing outsource partnerships.

Many companies in Ireland have built world-class high value-added manufacturing capabilities, particularly in food, information and communications technology, pharmaceuticals and medical technologies. Continuing improvements and technological changes, such as nanotechnology and high-speed communications, will lead to new products, new processes and higher value-added manufacturing. In certain sectors, Ireland has built expertise in process design and improvement, automation, quality assurance, supplier selection and management, and logistics management. Ireland's existing expertise provides a base for continued wealth creation over the next decade and we envisage that Ireland's manufacturing base will continue to operate at the forefront of manufacturing technologies and processes.

Companies should continuously innovate to improve productivity and increasingly engage in applied research for both products and processes. They should increasingly engage in early stage manufacture of products and implementation of manufacturing processes and in a range of activities that facilitate closer involvement with the customer, such as technical support, order management, and product management. Where it makes commercial sense, companies should embrace opportunities for outsourcing and manage the transition of low value production to lower-cost countries.

For foreign-owned companies in particular, existing capabilities and experience can be leveraged. These can be combined with knowledge of multinational structures and practices, our attractive tax regime and our geographical location between American and Asian time zones, to position Ireland as an international or regional headquarters for managing the supply chain.

The strategy set out in this report should assist companies by providing a business environment that specifically reinforces the competitiveness of successful firms and sectors, through applied research programmes, focused marketing support and collaboration within and across industries.

As part of the development of this strategy, a number of industry advisory groups were established to assess the opportunities for Ireland in high-value manufacturing and related activities. The following sectors were reviewed:

High-Value Manufacturing Sector	Sub-sectors/Activities ⁷² that offer opportunity for further development
Pharmaceutical/ Biotechnology	Process development Ethical pharmaceuticals Bio-pharmaceuticals
Food	Prepared consumer foods Functional foods Food ingredients Specialty foods
Information and Communications Technology	Supply chain management- hardware & systems Software development ⁷³ Infocomms – eLearning, wireless, digital media Integrated circuit design Customer technical support
Medical Technologies	Cardiovascular – cardio-rhythm management Diagnostics
Engineering	Proprietary products in niche areas, such as automotive and telematics
Consumer Goods	High-margin goods, enhanced by strategic use of design

The potential for Ireland in the above sectors is described further on the CD-ROM accompanying this report.

A vision of the medical technologies sector is provided overleaf as an example of how we might develop high-value manufacturing. The vision for 2015 is based on the assumption that appropriate policy initiatives are undertaken to realise the opportunities and capitalise on the benefits of clustering and networking.

Ireland also has a significant opportunity to build on industries which add value to its natural resources, including food and tourism. For example, the agriculture, food and drink sectors are of greater importance to Ireland than to any EU member state. With annual output of €16.8 billion and total exports of €6.7 billion, the sector accounts for over 55% of exports by indigenous companies and 20% of industrial employment. A vision of the agri-food sector is also provided in Appendix E to demonstrate how a focused cohesive strategy can help to further drive the development of the sector as it faces increased challenges over the next decade.

⁷² Indicative only and not intended to be an exhaustive listing of potential opportunities.

⁷³ A number of the advisory groups identified the development of specialised, sector-specific software as a particular opportunity.

Developing High-Value Manufacturing: An example

Medical Technologies

The Starting Point (2004)

Approximately 20,000 people are employed in the medical technologies sector in Ireland, and 13 of the world's top 25 medical technologies companies have operations here. Several indigenous companies are sub-suppliers to the foreign-owned companies, and increasing numbers now develop and commercialise proprietary technologies in niche areas.

A Vision of the Medical Technologies Sector in 2015

If appropriate policy initiatives are taken, by 2015 Ireland will be recognised globally for excellence in medical technologies, in particular cardiovascular and diagnostic technologies, having built on the capabilities of the cluster formed in the 1990s in the West of Ireland. Ireland will be the location of choice for research and development, manufacture and marketing of innovative high-value products and solutions.

Ireland will have considerable strength in applied research, particularly in the areas of cardiovascular and diagnostic technologies. Enterprise and research institutions will collaborate effectively, and an intellectual property regime will support commercialisation and access to research. Longer-term research in the areas of biotechnology and nanotechnology will support the industry's further development.

Ireland's manufacturing capabilities will be world-class, particularly in the manufacture of complex and high value-added products. The sector will have developed excellent capabilities in leading-edge supply chain management, resulting in significantly reduced time to market, increased efficiencies and a customer-focused demand-led operations model.

Business networks will foster collaboration within the sector (both internationally and nationally), for example through applied research programmes funded jointly by enterprise and Government, and through joint market intelligence-gathering and dissemination. They will also enable industry players to meet with and discuss cross-sectoral opportunities with firms in ICT, pharmaceuticals and biotechnology.

A number of foreign-owned firms based in Ireland will have global or regional responsibility for product management, leveraging off their success in R&D and new product introduction. Others will have extended their mandate to include European sales management.

Some early-stage growth companies will have established in Ireland, attracted by the intellectual property regime, the low rate of corporation tax, and the 'cluster effect' – the country's proven in-depth industry and market knowledge, and pool of talent and expertise in their area of business. The development agencies will provide support for market entry, by providing intelligence on European markets, assisting in the identification of optimum channels to market, clarification of standards and regulatory issues, and identification of potential outsourcing partners.

Ireland's indigenous base will have continued to grow, addressing niches with high value products, with the support of specialised venture capital funds.

Ireland will host a medical technologies conference annually, focusing on areas where Ireland has built world-class capability.

3.1.3 Developing Locally-trading Businesses

Future success will require that businesses trading locally, including public services, are world-class in terms of efficiency, effectiveness and innovation.

Between 1993 and 2003, employment in Ireland increased from 1.2 million to approximately 1.8 million, while employment in agency-supported companies increased from 217,500 to 298,000. As the agency-supported companies trade internationally, the bulk of the employment growth over the decade was in businesses trading locally (ie, providing goods and services within Ireland, including retailing, transportation, and healthcare). These locally-trading businesses will continue to play an important role in the economy in the years ahead.

Standards of living in a country depend on labour productivity and the proportion of the population in work. In Ireland, with a low rate of unemployment and a high rate of workforce participation, the best way to improve living standards is to increase productivity. As the locally-trading sector is the major source of employment, increased productivity in this sector would have a significant positive effect on the whole economy. At a broad sectoral level, productivity growth during the 1990s in the labour-intensive market services sector⁷⁴ (average annual growth rate of 1.9%) and the construction sector (average annual decline of -1.0%) was significantly lower than in the more capital-intensive manufacturing sectors (average growth rate of 8.9%).⁷⁵ There is also a relatively low adoption of eBusiness technologies,⁷⁶ and relatively low rates of innovation.

Many locally-trading sectors are, by their nature, sheltered from international competition, and some, by regulation, from effective domestic competition. Examples include quantitative restrictions on entry, and special case exemptions. Prices have risen significantly over the past number of years, with consequent damage to the competitiveness of Ireland's internationally-trading industries.⁷⁷ It is essential that steps be taken where possible to remove domestically imposed barriers to entry.

The Government has a role to play in ensuring a supportive business environment for locally-trading businesses, especially through price stability, well-managed public finances and regulations that promote competition and entrepreneurship. Competition is likely to increase in the years immediately ahead, as Government increasingly recognises the importance of putting consumer interests ahead of producer interests and implements corrective measures, and as cross-border trade intensifies throughout the EU and globally. Increased competition provides strong impetus for innovation, responsiveness and higher standards, and ultimately benefits efficient companies and drives success.

⁷⁴ Market services exclude education, health, public administration and defence, because of the difficulties associated with measuring the output of the public sector.

⁷⁵ Productivity measured as output per worker: Central Bank of Ireland, Quarterly Bulletin, Spring 2004.

⁷⁶ Ireland was ranked joint seventh of nine case study countries, including Germany, Denmark, Australia, Netherlands, Sweden, Singapore, the UK and the US. Forfás, eBusiness Monitor Report, 2003.

⁷⁷ National Competitiveness Council, Annual Competitiveness Report 2003.

The companies that will succeed in the years to 2015 are those that:

- » Benchmark their performance against sectors already facing significant national and international competition, and adopt best practice from them (for example, logistics management, customer services, investment in training and R&D)
- » Focus on meeting customer needs and delivering high-quality services cost-effectively. In particular, companies delivering legal, financial, insurance, educational, communications, logistics and transportation services must do so to best international standards of quality and cost
- » Use appropriate levels of technology to meet customer requirements, to deliver solutions and to reduce costs
- » Innovate by continually developing their product and service offerings in response to, or in anticipation of, market demands.

3.2 Changes Needed to Achieve Success

Achieving success in the areas of opportunity outlined above will require developing:

- » **In-depth knowledge of markets and customer needs**
- » **The ability to develop high-value products and services to satisfy those needs.**

The development of these characteristics will be facilitated by a sectoral focus and by business networks.

This presents a considerable challenge for businesses in Ireland. Indigenous companies, in general, have further scope to penetrate international markets and to increase their utilisation of technologies. They are hindered from maximising potential to some extent by small scale, relatively weak international sales management capability and limited resources. Few of the foreign-owned companies based in Ireland sell directly to customers or have any direct customer relationship. R&D performance by firms in Ireland is also weak by international comparison, which limits the ability of firms to develop new products and services.

The evolution of the enterprise base required for long-term success is illustrated in Figures 3.1 and 3.2. These show a progressive rebalancing of our base of expertise, in which our current strength in manufacturing and operations is complemented by increased strengths in R&D and the application of technology, and sales and marketing.

Figure 3.1

Profile of Expertise in Enterprise in Ireland, 2004⁷⁸

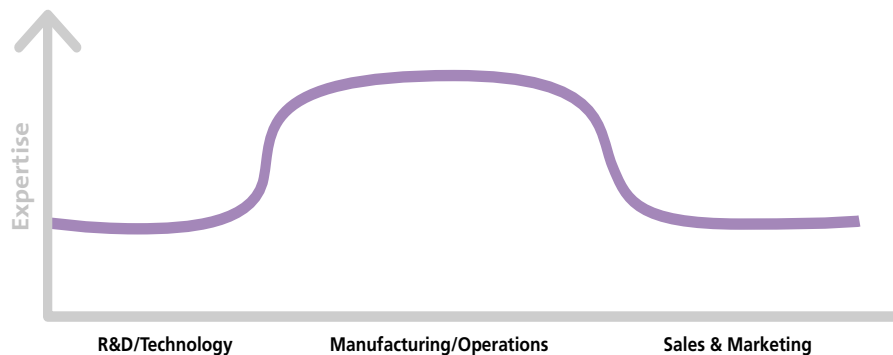
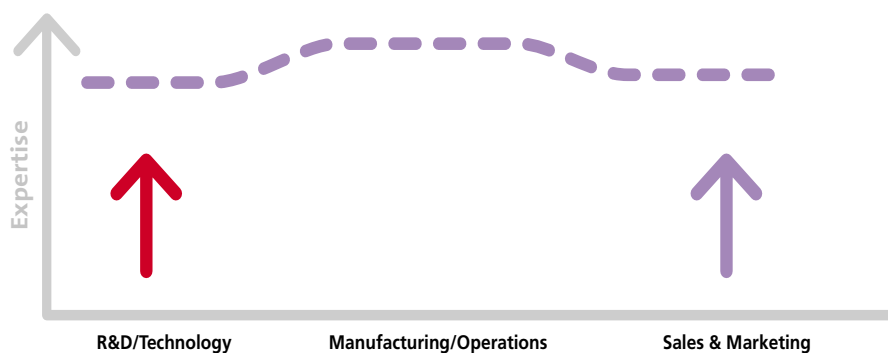


Figure 3.2

Required Profile of Expertise in Enterprise in Ireland, 2015



3.2.1 Knowledge of Customers and Markets

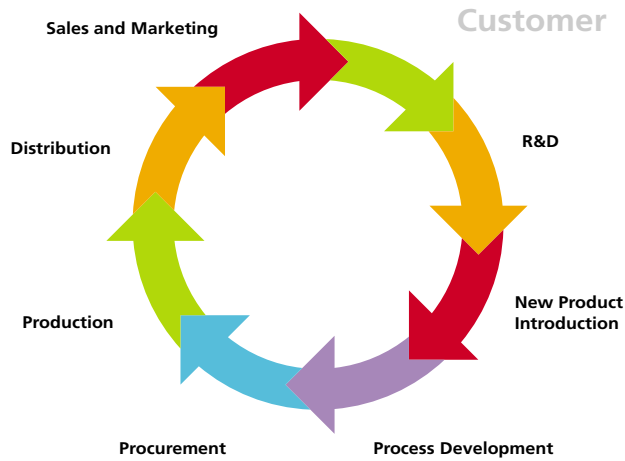
Over the next decade, enterprises based in Ireland will have built an in-depth knowledge of customers and markets and achieved competitive advantage by delivering customised and innovative solutions that meet or exceed customer expectations.

In the past, suppliers typically produced standard products and made them available at a standard price. More often today, it is the customer who defines specific needs and the supplier delivers a tailored solution, (Figure 3.3). Therefore to succeed today, businesses must be closer to their customers, building an in-depth understanding of their needs so that they can develop and deliver customised and innovative products and services.

78 | Illustrations adapted from; Edmond Molloy PhD and Edward Delaney D.B.A, *Strategic Leadership of Multi-National Subsidiaries: From Superior Performance to a Vital Part of Corporate Value Chain*, 1998.

Figure 3.3

The Value Chain Driven by the Customer



Companies also need to understand competitor offerings and strategies, be aware of early indicators of market trends and identify and react to new and emerging market opportunities. Time to market and the ability to be proactive is critical. This necessitates a regular presence in existing and potential markets and continuous tracking of market trends, competitors, technologies, standards, regulations and products. While this is easier for larger companies to achieve, smaller companies are constrained by management capacity - and in some cases management capability - and financial resources.

A number of progressive Irish companies are highly successful in capitalising on international market opportunities, including some that are world leaders in their areas of activity. However, they are in the minority and this 10-year strategy seeks to maximise the potential of a greater proportion of Irish firms to access new markets. A support framework should be established that enhances access to the most relevant market knowledge and develops sales, marketing and management capability, taking account of the particular challenges facing smaller companies.

Although foreign-owned companies in Ireland in general have limited direct contact with their customer base (with the exception of customer support centres), there are opportunities to engage with the customer through activities such as product management, order management and fulfillment, sales lead generation and market research. Such potential should be exploited.

There is also an opportunity to encourage early stage growth companies to make Ireland their Gateway to Europe, by establishing headquarters functions here, including control and management of sales and marketing strategies. Although Ireland has had limited success in this area to date, recent changes to the corporation tax regime now give us a particular advantage.

3.2.2 Developing High-value Products and Services

In 2015, enterprises based in Ireland will consistently achieve high added-value by applying research, technology and innovation to achieve excellence in product and service development.

We have outlined the importance of in-depth market knowledge to inform innovation in product and service development. While some innovation will come from business process engineering, brand management and product/service design, much of it will depend on the development and application of technology. For technological innovation, firms must have either the in-house capacity for research and development or the capacity to identify, evaluate and apply the results of R&D carried out elsewhere.

Ireland has already increased investment in R&D to improve the national capability and capacity for innovation. By 2015 we will need to have developed a knowledge and skill base that is extremely attractive to and valued by indigenous and foreign-owned firms.

The research talent fostered by PRTL⁷⁹, SFI,⁸⁰ IRCSET⁸¹ and others will be a national competitive strength. It is important, however, that the knowledge and skills arising from these programmes be both exploitable and optimally exploited in Ireland. This will require focusing the research activities, developing capacity and capability within enterprise to commercialise the intellectual property arising from research and employing people with research skills.

In Europe, research initiatives tend to be supply-driven. While they successfully develop knowledge and technology, these initiatives are less successful than their US counterparts at creating value propositions that can be commercialised.

We need to ensure that research in Ireland is led and informed by market needs (demand-driven), so that we obtain economic value from the research investment. Initiatives to improve enterprise access to research in higher education institutions, to foster collaboration between academia and enterprise, to increase mobility of people between academia and enterprise and to drive investment in a number of key areas where Ireland's enterprise base can benefit are essential to achieving this aim.

Foreign-owned subsidiaries in Ireland that identify market needs and work with the Irish research base to satisfy them will become strategically important to their parent organisations and embedded in the Irish economy. Indigenous companies can potentially become world leaders in specific niche areas.

To build strategic value based on research, technology and innovation, companies in Ireland will:

- » Build links to customers and continuously assess changing needs and trends
- » Build on activities funded by PRTL, SFI, and IRCSET, and especially on those niches where Ireland has leading research capacity
- » Participate actively in technology foresight, strategic technology platforms, market watch and other intelligence-gathering activities
- » Participate in international standards activity

⁷⁹ Programme of Research in Third-level Institutions.

⁸⁰ Science Foundation Ireland.

⁸¹ Irish Research Council for Science, Engineering and Technology.

- » Establish linkages and other business relationships with innovative companies
- » Create a focused demand for publicly funded applied research.

The following example outlines how a multinational manufacturing company repositioned itself as a software development entity with global responsibility and has developed key relationships with its customers.

Knowledge of Customers, Markets and Technologies: An example

A multinational corporation established a subsidiary in the West of Ireland in the 1970s to manufacture electronic equipment. During the early 1990s, the Irish management team succeeded in extending the subsidiary's mandate by undertaking specific software development projects that were allocated by the parent company and significantly growing the R&D capability and global reach of the subsidiary.

During the recent economic downturn, the parent company was severely impacted, and outsourced manufacturing operations. It shed over half of its 90,000 employees worldwide in an attempt to contain costs and re-balance the strategic focus to core competencies in sales and R&D.

During this period, the Irish entity lost its manufacturing mandate as the corporation consolidated its global operations. However, the Irish management team was confident that it had built key expertise within its R&D division, and acquired sole global responsibility for contact centre software development in addition to other R&D functions, while expanding customer facing sales engineering services. The company also established a Customer Partnership Centre in Ireland that currently hosts over 700 customers annually for one-to-three day detailed product strategy reviews and sales engagements. Not only are the products demonstrated to potential customers, but the engineering team also meets directly with customers to understand fully their current and future needs. This direct interaction with its customers is an invaluable source of innovation for the corporation.

Today, the company employs approximately 350 high skilled people in a range of high-value activities of strategic importance to the parent company, including software development, product management, sales engineering services, treasury management and financial shared services. Additionally some high value R&D services are outsourced in Ireland.

3.3 Business Networks

Knowledge and expertise in our target markets and in product and service development will be best developed by reinforcing activities or sectors where firms or groups of firms have or can develop a strong leadership position.

While Government will always have a role in the development of enterprise, it is the firms themselves, together with educational and research institutes, that must work together and co-operate to drive the development of the sector, inform the research agenda, and drive the provision of sector-specific infrastructure, capital and skills.

In the coming decade, well-developed business networks will become increasingly important mechanisms for driving success. These business networks will include educational and research institutions that will respond to enterprise needs for knowledge, skills and facilities. Similarly, the networks will include financial partners, who will be sufficiently well-informed to be able to support individual firms with capital at critical stages of development.

From the State's perspective, strong, coherent business networks can provide a clear articulation of enterprise priorities. In addition, as companies find it easier to access private sector finance, the State should increasingly deliver its support for enterprise through networks, where their effect will have wider economic impact, rather than directly to individual firms.

Such initiatives should help smaller companies to overcome the problem of small scale. Firms that participate in networks benefit in a number of ways:

Shared Costs and Risks: Firms can share the costs and risks of major innovations – costs and risks that could not be justified by any individual firm, such as specialised equipment, research, consultancy, or overseas market development activities.

Enhanced Learning: Co-operation between partners in a network provides an excellent mechanism for transferring tacit knowledge. Participants can share information on best management practices, technologies, organisational and operational models and markets.

Development of Market Focus: Firms can work together to enter new markets. They can engage in joint marketing and promotional activities, or they can share the costs of overseas offices and personnel. Firms within a network can build together either critical mass or a complementary set of resources, to create product, service or integrated solutions that could not be provided by any individual firm acting alone.

Platforms for Industry, Academic and Public Sector Co-operation: By participating in networks, firms can develop a shared understanding of and response to opportunities and challenges, and can present educational and research institutions with agreed requirements for syllabi, skills, and technological research and development. They can also articulate their needs to the state agencies.

Business Networks: An example

Developing the Wireless Communications Software Sector

The Starting Point (2004)

Today the wireless communications software sector consists of a number of indigenous and foreign-owned firms, employing approximately 4,500 people. It has built up particular competences in system software, billing, security and middleware. This concentration of complementary capabilities presents Ireland with a strong base on which to develop the industry and expand into new areas.

The Wireless Sector in 2015

With appropriate policies and the active participation of the industry, supported by the education and research systems, the financial community and the development agencies, Ireland can become a world centre for wireless communications. By 2015, we envisage that Ireland will be internationally recognised as an attractive location for wireless communications software with many leading companies involved in complementary activities, including mobile software applications, hosting, test and certification activities, security and billing systems.

The sector will be actively supported by its business network, which gathers and disseminates information on market developments, international projects, technology roadmaps, etc and actively participates in the development of industry standards. The network will be funded jointly by enterprise and the State.

Enterprise will actively collaborate with the research community on market-led applied research projects. The rights and responsibilities relating to the exploitation of intellectual property arising from these projects will be well understood and agreed by all parties and the efficiency and effectiveness of the intellectual property regime will be renowned internationally. The tax and legal environment will be particularly competitive for continuing to exploit intellectual property from Ireland.

The trial and deployment of new wireless technologies will be stimulated and promoted by a more liberalised spectrum management regime. An ultra wideband test bed will have been established, and Ireland will have taken the lead in ultra wideband licensing. This will enable researchers and developers to test new products, applications and services.

Ireland will host a major international wireless event annually, focusing on mobile applications. This event will attract the leading international players, including operators, applications developers and product and handset developers.

The educational system will produce graduates that satisfy the needs of enterprise, including technology graduates with a firm understanding of the value of intellectual property and how to exploit it, and an understanding of business development strategies and international sales and marketing.

Critically, the sector will have developed and grown into a mature, self-sustaining cluster, with the following characteristics:

- »» *A sizeable enterprise base, with companies that understand the needs of their customers, and how to differentiate themselves from their competitors. They will have the ability both to develop technology and to apply acquired technologies*
- »» *Leading global players continuing to invest in Ireland and locating high value and development activities here*
- »» *Active support from Enterprise Ireland's overseas network, through marketing programmes, identification of international partnerships and assisting companies to gain their first 'reference' customer*
- »» *Companies linked closely with the academic research base and with R&D funding focused on supporting the development of the cluster*
- »» *A strong networking culture where companies, research institutes and development agencies work together to develop the sector.*

3.4 Building Competitive Advantage

To summarise, if Ireland is to build the kind of enterprise base outlined in this Chapter, and make the transition to a market-led economy, knowledge-based businesses will need to develop strengths in two areas:

- »» In-depth knowledge of markets and customer needs
- »» The ability to develop high-value products and services to satisfy those needs.

However, these strengths within the firms can be built only in a highly evolved and supportive business environment that includes the following elements:

- »» A world-class education and training system that is responsive and flexible, and that supplies the skills required by the changing needs of enterprise
- »» A competitive taxation regime
- »» A state system that is proactive and responsive, with the enterprise agenda at the centre of national policy development.

No one of these elements alone will provide competitive advantage. It is the unique combination of these five elements that will distinguish Ireland from other countries, and the strategy in this report depends on the successful, parallel realisation of all five.

These five elements are discussed in detail in Chapter 4, along with the actions recommended for achieving them.

While the combination of the elements outlined above will establish Ireland's unique competitive advantage, they must be underpinned by essential conditions that are the basic requirements for doing business:

- » Cost competitiveness
- » A physical and communications infrastructure
- » Innovation and entrepreneurship
- » Management capability.

These are not positive differentiators – they will not confer competitive advantage on enterprise in Ireland. They are, however, potentially negative differentiators – any deficiency in these areas would seriously undermine Ireland's competitiveness and negate any advantage created by other strengths. These essential conditions are discussed in Chapter 5.