



Making it Happen

Growing Enterprise
for Ireland

Forfás Recommendations to Government

Forfás 



Minister's Foreword

Publication of this enterprise policy report comes as Ireland faces its most significant economic challenges in many decades. Sustainable economic growth and employment opportunities for our people will only be achieved through the development of our enterprise base and our export performance.

This report is the result of many months of research by Forfás and sets out an evidence based agenda for action to support enterprise growth and jobs in the short-to-medium term. The report will make an important contribution to delivering the objectives of the *Smart Economy*, as set out in the Government's Framework for Economic Renewal. It also brings together, in a coherent and focused way, the key messages from other recent strategies and reports such as the Innovation Taskforce, the Strategy for Science, Technology and Innovation, and the National Skills Strategy.

In a very practical way, the report identifies the actions needed to ensure a competitive, sustainable enterprise base that will deliver growth and jobs in the period to 2015. The recommendations in the report are focused on enhancing the business environment and are complemented by appropriate enterprise-level interventions. They are soundly based on enhancing productivity, innovation, competitiveness and a strong enterprise mix that will build resilience in Ireland's enterprise base.

Productivity and innovation will be at the core of Ireland's enterprises, enabling firms to compete effectively on domestic markets and to capture international opportunities. This, in turn, will provide quality employment and an improved standard of living for all. The objective is that Ireland will be globally recognised as the best place to start and grow a business, driven by its creative and highly skilled people and "can do" attitude.

The role of Government is to provide a supportive business environment in which *all* enterprises can establish, thrive and grow. This involves continued and focused investments and effective policies across a wide range of areas, including entrepreneurship, education and training, tax and finance, competition and regulation, and physical infrastructures.

Enterprise and Government must work together to drive delivery of the recommendations in this report. In doing so, we can build on our current and enduring strengths and position ourselves for a robust recovery. I am confident that we can continue a high rate of development and growth well into the coming decade if we work together to make it happen. Ireland will once again become one of the most competitive and successful open economies in the world.

A handwritten signature in black ink that reads "Batt O'Keeffe". The signature is written in a cursive, slightly stylized font.

Batt O'Keeffe

Minister for Enterprise, Trade and Innovation



Chief Executive's Preface

This report *Making It Happen - Growing Enterprise for Ireland* outlines the actions needed across a range of policy areas to ensure that the optimum business environment is in place to deliver economic growth and the consequent employment opportunities.

An export-led strategy has been at the core of enterprise policy for a number of decades and served Ireland well over the early part of the 2000s. More recently, however, a combination of external circumstances and the boom in domestic demand and construction led to overheating in the domestic economy and ultimately undermined our international cost competitiveness. The underlying principles of our previous economic success were compromised. What is required now, therefore, is a return to basics.

The best route to deliver sustainable economic growth and job creation for Ireland requires a return to export-led growth. Exporting also fuels the domestic economy and delivers more sustainable job opportunities than could otherwise be achieved by an economic model dependent on consumption or government expenditure.

This is not a case of starting from scratch with enterprise policy. Ireland has a proven track record in a number of markets and sectors and international trade and investment has been relatively resilient during the recession. It is true that growth in global markets is a key factor and one over which Ireland has no control. Continued and targeted action to address those areas over which we have control is essential to improve Ireland's competitiveness so that businesses are poised to take advantage of the global recovery as it happens.

This report sets out policy requirements to support all enterprises: exporting firms, firms with export potential and locally trading firms. It identifies those sectors with opportunity; both new and traditional, both manufacturing and services and both foreign and indigenous. It is about providing the right competitive environment for *all* enterprises to locate, grow and thrive in Ireland.

It requires a whole of government response so that Ireland's growth potential and consequent job creation is achieved. No single policy action will make the difference on its own. It is about holding firm, to the objective of building a sustainable, competitive enterprise base and implementing the full suite of complementary actions in a co-ordinated manner. This report prioritises those actions that are critical to support enterprise development.

In presenting this report to the Minister for Enterprise, Trade and Innovation, I would like to thank all who have contributed to its production.

A handwritten signature in black ink, appearing to read 'Martin Shanahan', with a long horizontal flourish extending to the right.

Martin Shanahan,
Chief Executive, Forfás

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Executive Summary

Overview

Building Ireland's Smart Economy - A Framework for Sustainable Economic Renewal was published in December 2008 and outlines the Government's programme for medium-term economic recovery, centred on five action areas:

- Securing the Enterprise Economy and Restoring Competitiveness;
- Building the Ideas Economy - Creating 'The Innovation Island';
- Enhancing the Environment and Securing Energy Supplies;
- Investing in Critical Infrastructure; and
- Efficient and Effective Public Services and Smart Regulation.

A supportive enterprise policy is crucial to delivering on the objectives of the Smart Economy and Programme for Government. This report on enterprise policy is timely, given the changing economic circumstances. Drawing upon the research and recommendations contained in a range of enterprise related strategies that have been published over recent years¹, it outlines the priority actions required to underpin a sustainable, competitive enterprise base.

The report adopts a *whole of enterprise* approach, encompassing all sectors, as the best route by which Ireland can deliver sustainable growth over the coming years to 2015 and that generates employment for the longer term. It is premised on returning to export-led growth based on innovation, productivity, cost competitiveness and a strong enterprise mix. It takes cognisance of the broad objective of new EU Industrial Policy to achieve greater coherence between the EU level and member state levels².

The analysis was undertaken against a backdrop of global and domestic recession, at a time when unemployment has reached over 13 percent³ and GNP has fallen by 13.8 percent over the period 2007-2009⁴. The depth and severity of the recession demonstrates the unsustainable nature of growth over the period from 2001 to 2008, which was driven by the construction boom, high levels of personal credit and domestic consumption. It is a situation that Ireland does not wish to see repeated. At the same time, there are high expectations in terms of delivering an immediate solution to Ireland's unemployment challenge.

A return to global growth is crucial to the achievement of ambitious forecasts, but this is something over which the Irish Government has no direct control. What government can do, and has started to do, is to take decisive action to address the more serious issues in the domestic economy that act as barriers to realising the potential of enterprises. While some progress has

¹ *Ahead of the Curve*, Enterprise Strategy Group, 2004; *Strategy for Science, Technology and Innovation*, DETE, 2006; *National Skills Strategy*, EGFSN, 2007; *Catching the Wave, a Services Strategy for Ireland*, Services Strategy Group, 2008; and *Developing the Green Economy in Ireland*, High Level Group on Green Enterprise, 2009. It also builds upon *Innovation Ireland*, Report of the Innovation Taskforce, 2010

² Including, for example, RD&I policies and framework programmes, integrated Single Market, Cluster policies

³ *Quarterly National Household Survey*, CSO, Q4 2009 (June 2010 Release). Unemployment in Q1 2010 was 12.9%, as per QNHS

⁴ *Quarterly National Accounts*, CSO, June 2010

been made to address these - to restore fiscal stability, to enhance access to credit, to prioritise capital investment and to improve international competitiveness - more needs to be done⁵.

This report presents priority recommendations that must be actioned to enhance the business environment, and to ensure that *all* firms in Ireland are well positioned for growth and that individuals are appropriately skilled to take advantage of opportunities as they arise.

We are not starting from scratch. Ireland has a strong base from which to grow, in terms of sectors and firms, indigenous and foreign, internationally and locally trading.

Vision and Objectives

A sustainable, competitive enterprise base will be at the core of Ireland’s future economic growth. Productivity and innovation will be at the core of Ireland’s enterprises, enabling firms to capture international opportunities and to compete effectively on domestic markets, providing quality employment and sustaining a high standard of living for all. Ireland will be globally recognised as the best place to start and grow a business, driven by its creative and highly skilled people and ‘can do’ attitude.

The ESRI’s macroeconomic model offers the best available quantitative guide as to the future potential of the Irish economy in the medium-term. Its recently published report *Recovery Scenarios for Ireland: An Update* indicates the growth potential for Ireland as outlined in Table 1⁶.

Table 1: ESRI Recovery Scenarios for Ireland: An Update - Key Metrics (2011-2015)⁷

		Low Growth Scenario	High Growth Scenario
GDP	(Ave Annual)	3.2 percent	4.6 percent
Export Growth	(Ave Annual)	5.0 percent	8.4 percent
Unemployment Rate (ILO)	(Ave Annual)	7.1 percent	4.8 percent

Beyond 2015, economic growth is expected to moderate - to three percent per annum under the high growth scenario; or to approximately two percent per annum under the low growth scenario⁸. The high growth scenario, although optimistic, should be regarded as achievable if the right actions are taken and a favourable external economic environment materialises. It is premised on a return to export-led growth as a key driver for Ireland’s economic recovery. It is also based on the assumption that actions will be taken to address the fundamental domestic issues, and that they will be effective, to:

⁵ Policy and action to restore fiscal stability is outside the scope of this report

⁶ *Recovery Scenarios for Ireland: An Update*, ESRI, July 2010

⁷ The ESRI has produced two macroeconomic scenarios for Ireland: a *high growth scenario* predicated on the Irish economy responding to world economic growth and changes in competitiveness in the same way as it has done over the last twenty years; and a *low growth scenario* where the Irish economy records lower rates of growth over the medium-term for a number of reasons (e.g. because the export sector suffers long-term damage or because structural unemployment remains high due to a failure of labour market policy)

⁸ The forecast 3 percent growth under the *high growth scenario* is in line with the economy’s long run potential rate of growth; while under the *low growth scenario*, growth is expected to be slightly below the long run potential. Higher growth rates in the period to 2015 arise as a result of spare capacity in the economy facilitating a number of years of above average growth

- Restore fiscal stability⁹ A return to macroeconomic stability will improve investor and consumer confidence, foster demand and boost enterprise revenue
- Improve access to credit So that firms will have the cash needed to weather the recession and to invest for future growth - in enhancing productivity, in embracing innovation and in targeting new markets
- Restore international competitiveness This is critical for the attraction of foreign investment; and for the success of Irish firms competing on international and domestic markets.

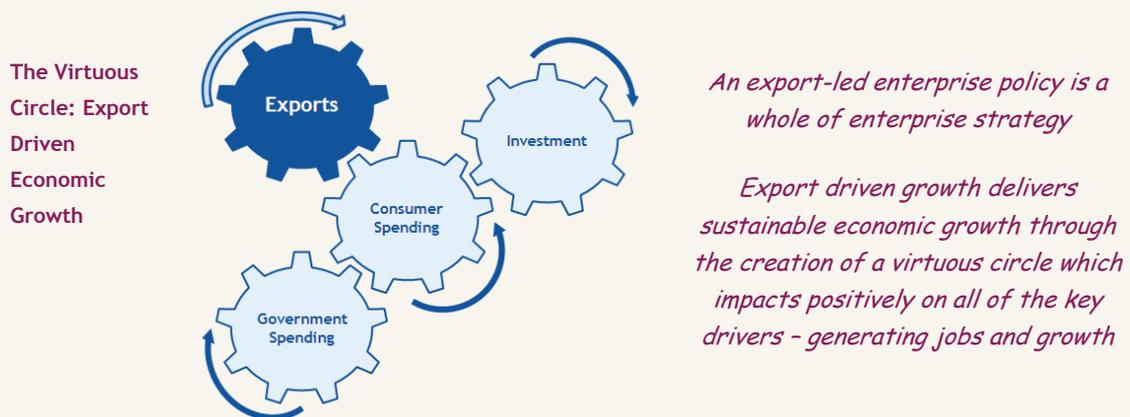
Having regard to these basic assumptions, the recommendations outlined here, aimed at accelerating enterprise growth and job creation, will enhance Ireland’s ability to achieve this vision.

Export-led Growth - A Sustainable Basis to Deliver Growth and Jobs

Economic performance is a function of four interlinked factors, including exports¹⁰, investment, consumption and government spending. For a small open economy like Ireland, exports is the only component that has a higher potential for growth on the basis of value added through increased productivity, innovation, competitiveness and a strong enterprise mix. A growth model that is driven by exports will deliver:

- Sustainable direct job opportunities above those provided by serving the domestic market;
- Growth in revenues for firms, beyond what the domestic economy can provide;
- Increased opportunities for locally trading businesses, and for job creation;
- Substantial ripple effects in terms of job creation across the entire economy; and
- Enhanced tax yields for the Government.

Beyond these immediate effects, export growth can begin to turn the other wheels of the economy, and creates a virtuous circle to deliver growth and jobs.



It is clear that deviation from such a model over the last decade has cost Ireland dearly.

⁹ The restoration of financial stability is critical, but is outside the scope of this review and action is being taken by Government to address this issue

¹⁰ Assumes positive net exports - total exports minus total imports

Employment Potential

The ESRI high growth scenario indicates that by 2015, Ireland could have almost two million people in employment¹¹, an increase from the 1.86 million working today. Over the short-term, job creation can be expected through a combination of ongoing replacement demand and increasing demand for labour as the economy recovers.

The enterprise development agencies responsible for supporting export-oriented firms play an important role in stimulating enterprise growth. Enterprise Ireland and IDA Ireland's objectives are to support the creation of 135,000 direct new jobs over the period to 2015 (Table 2), and the tourism sector aims to support 15,000 new jobs. *Maintaining* employment is an equally important consideration in achieving forecast growth and the enterprise agencies' focus on supporting existing firms to continuously evolve and deepen their capabilities is critical in this regard.

Table 2: Annualised Enterprise Development Agency (IDA and Enterprise Ireland) Employment Objectives

2010	2011	2012	2013	2014	2015	Total
11,525	16,460	21,400	26,340	29,635	29,635	135,000

Looking across the entire enterprise base, ESRI/FÁS employment forecasts to 2015 indicate that the shift toward services is set to continue, so that by 2015 approximately 80 percent of the workforce will be employed in services¹² (60 percent excluding public sector). This should not be interpreted to mean that Ireland is no longer 'in manufacturing.' Ireland has strong manufacturing competencies and high value added, productive and RD&I¹³ intensive manufacturing will continue to contribute significantly to Ireland's exports and growth¹⁴.

At a sectoral level the ESRI/FÁS forecasts indicate that by 2015¹⁵:

- Employment in a range of services activities, including communications, business, finance, insurance and other market services is forecast to surpass pre-recession levels, as is employment in high technology manufacturing and transport;
- More mature sectors including tourism and hospitality (hotels/restaurants), retail and distribution, food manufacturing and construction are likely to resume growth but are unlikely to be fully restored to pre-recession levels;
- Employment in health, education and public administration and defence provide a significant contribution to employment and are likely to remain relatively unchanged (including public and private sector); and
- Sectors which are likely to continue to decline in employment terms include agriculture and low value added manufacturing.

¹¹ Between 1.93 million - *low growth scenario* and 1.99 million - *high growth scenario*

¹² Including construction as a service industry

¹³ Research, development & innovation

¹⁴ *The Report of the High Level Group on Manufacturing*, DETE & Forfás, 2008

¹⁵ Chapter 7 presents a more detailed overview of sectoral growth opportunities, taking into account new and emerging potential and the focus of the development agencies (including those outside of DETI's remit), which is not fully reflected in ESRI/FÁS data analysis

Forecasting employment trends is challenging. At a sectoral level, the degree of uncertainty is heightened, and sectoral employment forecasts are subject to differing views. Forfás' analysis of sectors indicates that growth potential set out in the ESRI/FÁS forecasts may be understated in some areas; for example, in healthcare services, given the increased shift toward private provision and internationalisation; and food, given the significant potential offered by global shifts in socio-economic and consumption trends; and yet may be overly ambitious in terms of the timing of growth trends for elements of high technology manufacturing¹⁶ and construction.

A Whole of Enterprise Approach

Although this review of enterprise policy places export growth at its centre, it represents a *whole of enterprise* approach, encompassing firms that trade internationally, those that currently serve local markets with potential to internationalise and those that will continue to play a key role in serving local demand (although these formerly discrete distinctions are becoming increasingly blurred over time). It demonstrates the strong interplay between internationally and locally trading firms and the fact that each has an important role to play in Ireland's future economic fabric. It considers the needs of *all* sectors operating within Ireland's economy, acknowledging that sectors contribute differently to economic growth - through added value, exports, employment and/or Irish Economy Expenditures (IEE)¹⁷.

Government itself does not actually create jobs. Ultimately it is people that generate ideas, that establish firms, that create opportunity and that create jobs.

Government's most impactful role is to provide a supportive business environment by addressing the critical success factors outlined below so that *all* enterprise can establish, thrive and grow. This involves continued and focused investments and effective policies across a wide range of areas including, for example, education and training, tax and finance, competition and regulation and physical infrastructures¹⁸. A whole of government response is needed, with the Department of Enterprise, Trade and Innovation (DETI) as the principal government advocate for the enterprise sector.

At the level of the firm, the enterprise development agencies¹⁹ will target direct financial and advisory supports to client companies (existing and new), that will lead to improved growth and job creation prospects. Actions taken at the level of the firm will be more effective if the business environment elements are addressed.

¹⁶ For example, Chemicals (Pharma) is facing a particularly challenging period globally as patents reach expiry, and mergers and acquisitions (M&A) activity has increased

¹⁷ IEE includes expenditure on salaries/wages, materials and services sourced in Ireland

¹⁸ The Government's *Infrastructure Investment Priorities 2010-2016*, published July 2010, is directly relevant in this regard

¹⁹ Under the aegis of DETI : IDA Ireland, Enterprise Ireland, County and City Enterprise Boards (CEBs)

The Critical Success Factors



For Ireland, as a small open economy, a sustainable, competitive enterprise base will rely on four interlinked and complementary critical success factors:

- Productivity;
- Innovation;
- Cost Competiveness; and
- A Strong Enterprise Mix.

Productivity

At its simplest, productivity measures the amount of output per unit of input (which includes labour, equipment/technology and capital). Productivity can be enhanced by increasing the efficiency with which these resources are used. For firms, it means efficient production and the effective utilisation of skills, equipment and technology. Perhaps most important, however, is the role that innovation plays in terms of productivity growth, which is discussed separately and is complementary to the focus on lowering costs and enhancing efficiencies.

Although there are a number of high value adding and productive sectors operating here, Ireland's overall productivity performance has deteriorated over the past number of years²⁰. Although some of this may be explained by the increased contribution from services and the relatively higher labour intensity involved in such activities, there is still room for improvement. Relatively small improvements in productivity in locally trading sectors (through increased use of ICTs for example), can have a substantial impact on the overall economy and GDP growth²¹. Enhancing productivity performance is critical to the maintenance of existing employment as well as attracting new investment.

There is an opportunity and an imperative to enhance productivity performance in Irish based enterprise; at the national level, through investments in education and skills development, and the energy and communications infrastructures that enable efficient movement of goods, electronic

²⁰ *Annual Competitiveness Report 2010, Volume I: Benchmarking Ireland's Performance*, NCC, 2010

²¹ *How to Compete and Grow: A Sector Guide to Policy*, McKinsey Global Institute, 2010

services and people, and facilitate international trade; and through selected interventions at the firm level to encourage and support company transformation initiatives.

Innovation

Innovation is a broad concept that is relevant to all aspects of a business. Innovation enables firms to differentiate their product and service offerings, to develop new ways to reach customers and markets, to improve business and operational processes and organisational structures. Innovation enhances competitiveness and drives productivity.

It is relevant to all firms and not just to exporting firms. All sectors and activities are evolving at an unprecedented pace. There are significant growth opportunities for innovative firms, whether trading in international or local markets, whether large scale or small, whether foreign or Irish owned, and regardless of the sector in which they operate. Innovative enterprises are more likely to be engaged in exporting (66 percent) when compared to non-innovative enterprises (33 percent)²². In general, however, SMEs tend to be less innovation active than larger firms²³.

Research-driven innovation is one part of the story. Innovation is also driven by customers and markets, by suppliers, partners, employees and/or Higher Education Institutes (HEIs) - operating within an environment that stimulates creative and innovative thinking. A business environment that is conducive to innovation facilitates collaboration and networking. It values (and invests in) education and knowledge; it facilitates the exchange of ideas and knowledge and provides a strong intellectual property framework²⁴; it stimulates demand for innovation in enterprise through strategic use of public procurement and regulatory frameworks; and it promotes the commercialisation of new ideas.

As outlined in the report of the Innovation Task Force, an innovation driven economy is key to stimulating entrepreneurship. Although not all entrepreneurship is based on innovation, it is one of the key conduits through which innovations are carried to the marketplace. Entrepreneurship will continue to play a key role in Ireland's return to sustainable growth and job creation.

Entrepreneurship and the start-up companies that emanate from entrepreneurial activity are the feed-stock for future exports and employment. Start-ups are also one of the means by which new sectors take root in Ireland.

Cost Competitiveness

Over recent years, Ireland's business costs had increased substantially such that they were considerably out of line with competitor countries and with underlying productivity performance. As an open economy that is reliant for growth on the performance of its exporting base, ensuring that Ireland is cost competitive internationally is of critical importance.

Recent price falls have helped to regain lost ground to some extent but may prove to be a cyclical response to the downturn. Further efforts are needed to ensure a sustainable, structural change to the costs of doing business in Ireland relative to competitor countries.

²² *Community Innovation Survey (CIS), 2006-2008*, CSO/ Forfás, 2010

²³ The latest CSO/Forfás Community Innovation Survey (2006-2008) indicates that 76 percent of all firms (foreign and Irish owned) that employ over 250 people are innovation active, compared with 40.1 percent of those that employ 10-49 people. Within the 10-49 employment category, 52.2 percent of foreign owned firms and 38.3 percent of Irish owned firms are innovation active

²⁴ Including IP protection through patents, copyright and trademarks

Of particular concern are the costs of labour, utilities, property/rents, business services and local authority charges.

Building a Strong Enterprise Mix

Evidence shows that Ireland's economic success in international markets has been driven primarily by a limited number of sectors (which have played a key role in maintaining Ireland's level of exports during this recession) and strong trade or intra-firm relationships with a limited number of countries.

Building a strong enterprise mix can ensure that Ireland is not overly reliant on these limited avenues for future growth and/or employment, is better protected from external shocks, and further underpins a sustainable model for economic growth.

A stronger enterprise mix can be realised by:

- Building on Ireland's strengths in **sectors** to realise emerging opportunities, and to achieve the dual objective of delivering *both* growth and jobs; and
- Developing existing and expanding to new geographic **markets** for exports, Foreign Direct Investment (FDI) and Outward Direct Investment (ODI).

Ireland's enterprise policy will continue to involve *both* the attraction and development of FDI and the establishment and development of indigenous companies. However, as efforts are focused on diversifying sectors and markets, it is opportune to ensure that adequate resources are effectively directed to:

- Accelerate and realise the potential of the **indigenous** base, building on its evolving capabilities and changing dynamic to realise a step-change in its contribution to growth and exports.

Sectors - Developing a Strong Enterprise Mix

The overarching objective is to achieve the optimum potential from all sectors to deliver on growth and jobs. Sectors contribute differently to the economy, with some being more export-oriented and others more employment intense. This basic observation is particularly important in these times of high unemployment.

It is possible to identify certain cohorts of sectors which, based on their overall stage of development in Ireland, share similar characteristics and business needs. This enables the identification of recommendations which are of most relevance to each cohort. This, in turn, informs how Government can best focus its resources (including those aimed at enhancing the business environment and direct firm level interventions) to stimulate growth and job creation across the entire enterprise base.

The enterprise development agencies provide direct supports toward export-oriented firms²⁵, and it is not recommended that this core focus be altered. The nature of direct supports through the enterprise development agencies will vary, however, depending on the market focus, maturity and stage of development of the sector and indeed, the capabilities and objectives of individual firms *within* sectors.

²⁵ Supports are also provided to enterprises with export potential. It would not be appropriate to extend financial supports to locally trading firms because of displacement effects; a small number of direct supports were introduced in response to the report of the Small Business Forum

The following categorisations have been used and encompass both manufacturing and services activities:

- A Building on Strengths and Convergence;
- B Emerging Opportunities and Untapped Potential;
- C A Renewed Focus on Mature Sectors; and
- D Locally Traded Activities.

A Building on Strengths and Convergence

Information and Communications
Technology (ICT)
Health LifeSciences
International Financial Services
Agri-Food
Internationally Traded Services

These sectors contribute the greatest proportion to Ireland’s total exports at approximately €130 billion²⁶. Both Irish and foreign firms are operating successfully in these sectors, although Irish firms in general (with the exception of the Agri-food industry) continue to face challenges in reaching scale, which impacts on their overall contribution to exports in particular.

Investments in R&D and Innovation; developing capabilities in leadership and management (which are crucial to driving scale); developing skills in sales and marketing, in risk management and regulation; are all key, as is the willingness of firms (and the supportive environment for them) to engage in alliances and partnerships. Access to high speed broadband networks and pervasive use of ICTs is critical as an enabler for enhanced productivity, innovation and market access. The enterprise development agencies play an important role in stimulating and directly supporting the continuous development of these sectors.

Given the strengths in these sectors, and as a small country, Ireland has a real opportunity to take a lead role in convergence. Driven primarily by consumer demands and enabled by technologies, convergence presents significant potential in new products and services across the boundaries of formerly discrete sectors - including, for example, drug eluting stents, ‘smart’ buildings and location based services. The enterprise development agencies will work collaboratively on the areas with most immediate potential: personalised healthcare; combination medical products; financial mathematics/informatics; digital media convergence; nutraceuticals and functional foods; and clean technology. Government’s role lies in facilitating companies, research centres and individuals to work across sectors, technologies and disciplines. Other considerations include ‘proofing’ the regulatory environment so that it is conducive to the needs of convergent products, business models and data protection.

B Emerging Opportunities and Untapped Potential

Clean/Green Technologies
Marine and Maritime
Creative Industries
Healthcare (eHealth) Services
Education Services

None of these sectors are fundamentally new to Ireland’s economy - and each offers further growth potential. Many of them are broad and include distinctive sub-segments. They also have a pervasive influence across the wider economy such that the development of an individual sector in this

²⁶ Forfás calculations based on *External Trade and Balance of International Payments*, CSO, March 2010; and *ABSEI 2008* (export data for medical device sector), Forfás, 2010

cohort will have a positive impact on others. To illustrate: Green Technologies directly impact construction, energy and high technology manufacturing; Creative Industries influence brand development and product design for a range of sectors, and are integral to the tourism cultural ‘product.’

The identification of new market opportunities is critical given the earlier stages of development for these sectors in Ireland²⁷. In this context, the recommendations in this report focused on addressing new markets are directly relevant.

In most instances there is no clear ‘ownership’ for each of the sectors in its entirety at government department or enterprise agency levels. Enhanced agency collaboration, beyond the DETI agencies as appropriate, is critical to drive a coordinated approach to their individual development²⁸.

C A Renewed Focus on Mature Sectors

Tourism and Hospitality

Retail and Wholesale

Transport, Logistics and Distribution

Construction

Often the desire to seek out ‘new’ and ‘smart’ sectors can mean that the role of more traditional and longer established sectors is considered to be of less importance. However, they provide a substantial contribution to employment in Ireland today, employing approximately 614,000 people²⁹ (33 percent of total employment) with a high

degree of employment churn - presenting employment opportunities on an on-going basis.

Each of the sectors includes firms that trade internationally as well as those primarily trading in domestic markets. Technology advances, together with the reduction in trade barriers for services, enhance the potential to increase exports and internationalisation prospects for firms operating within this cohort³⁰.

In fact, advances in technology are having a transformative impact in that they present ‘new’ niche high growth opportunities *within* each of these sectors, including for example ‘smart’ construction materials and ‘e’-tailing³¹. At a minimum, the use of IT across all aspects of the business can increase productivity and, because of their high employment intensity, the overall contribution of these sectors to GDP growth.

Stimulating re-skilling of people *in* employment is important for these sectors, particularly in IT and in sales and marketing, as is supporting management development.

Enterprise Ireland and IDA Ireland provide both financial and advisory direct supports to those firms that export or have export potential, and tourism is supported by Fáilte Ireland and Tourism

²⁷ The strategic approach to identification and development of new market opportunities as outlined in the forthcoming Department of Enterprise, Trade and Innovation (DETI), *Strategy on Trade, Tourism and Investment* is directly relevant to realising the potential for these sectors

²⁸ Some steps have been taken, in the case of green technology for example, with IDA Ireland, Enterprise Ireland and Science Foundation Ireland working collaboratively, and in the case of education services (with Enterprise Ireland now responsible for Education Ireland)

²⁹ *Quarterly National Household Survey*, CSO, Q1 2010 (June Release)

³⁰ Since the publication of the *Services Strategy* in 2008, Enterprise Ireland has established its *Going Global* initiative. This initiative is aimed at supporting services and manufacturing firms making the first steps towards trading in international markets

³¹ Retail trading over the internet

Ireland. For companies within this cohort that continue to trade locally, the most appropriate government interventions are outlined in the next section.

D Locally Traded Activities

Firms trading on the local market are key contributors to employment and Ireland's overall competitiveness. The greatest impact for growth in locally trading activities can be achieved through interventions at the level of the business environment, including: ensuring access to competitively priced, high speed broadband; stimulating re-skilling of both people *in* the workforce and the unemployed; and the development of effective labour market policies to increase flexibility and restore labour cost competitiveness.

Incentives currently available to smaller firms (a large proportion of which trade locally) consist of tax exemptions and reduced regulatory burdens, including exemption limits for VAT and corporation tax, the Employment Subsidy and PRSI exemption schemes. A limited number of direct financial supports were also introduced on the recommendation of the Small Business Forum³².

These aim to help small firms take the first steps toward investing in productivity enhancements through the use of IT and innovation³³. It is not suggested that direct supports to firms be extended beyond these interventions, with the exception of management development.

New Markets - Developing a Strong Enterprise Mix

Ireland has built strong trade relations with both the US and UK in particular, for exports, FDI and ODI. These relationships will continue to be important, but Ireland now needs to diversify its economic relationships if it is to realise its full potential and reduce vulnerability.

There is scope for Irish based enterprises to grow exports and ODI within the euro zone and the emerging economies in Brazil, Russia, India and China (BRIC) and for IDA Ireland to target increased levels of investment from the BRICs. There are considerable differences in business cultures, practices and regulation as well as the more obvious challenge for language skills. Companies also highlight that significant human and working capital resources are required to manage the longer sales cycle. Specific recommendations involve government and the enterprise development agencies taking a strategic approach to developing economic relationships with target countries, and relate to trade agreements, double tax agreements, visa arrangements, as well as enhanced agency collaboration and coordinated international marketing.

The Indigenous Base - Developing a Strong Enterprise Mix

Indigenous firms, including those trading internationally and domestically, contribute approximately two thirds to total employment. Although exports from the sector have increased over recent years and there are a number of well established Irish owned MNCs, the overall contribution of indigenous firms to Ireland's future economic growth could be further enhanced - taking into account the potential returns arising from broader internationalisation strategies including ODI. In terms of exports, Enterprise Ireland's objective is to increase the value of indigenous exports by up to 33 percent over the period to 2015. In this context actions focused primarily at assisting indigenous firms to achieve scale and to identify and capture new market opportunities are particularly relevant³⁴. Recommendations include enhanced interventions to

³² *Small Business is Big Business: Report of the Small Business Forum*, The Small Business Forum, 2006

³³ Tech Check and Innovation Vouchers, promoted through the County and City Enterprise Boards

³⁴ A number of actions are already underway and embedded in Enterprise Ireland's refreshed strategy to stimulate increased entrepreneurship and enhance scaling potential

build leadership capability and strong management capabilities, to develop sales, marketing and language capability, and to stimulate investments to enhance productivity and innovative capacity.

Short-term Imperatives

Enhancing Employability of the Unemployed

The scale of unemployment today is a real challenge facing Government. A small number of sectors and occupations (particularly construction and low value added manufacturing) are unlikely to return to pre-recession employment levels. This is not surprising, given the unsustainable basis for growth in construction over the past number of years, and the increased global competition from low cost locations for low value added manufacturing. The Government has responded with temporary measures to sustain employment to the greatest extent possible, including schemes such as Employment Subsidy, Stabilisation Fund and PRSI exemption³⁵.

Building upon recent analysis of the live register³⁶, the Government has identified four cohorts of unemployed that will be prioritised with respect to accessing relevant State supports aimed at improving the employability of the unemployed and enhancing education and skills levels so that people are equipped to take up future opportunities. This report's recommendation to expand work placements for graduates and school leavers is a key component of labour activation programmes, ensuring that individuals gain early exposure to the work-place and on-the-job skills development to complement their education.

Access to Finance

Firms cite access to, and cost of, finance as the most significant issue facing them today. This acts as a constraint as firms attempt not only to weather the recession and to survive, but also as they prepare for the upturn and invest in management development, productivity improvements and /or innovation as envisaged in this report.

Despite some progress there are indications of ongoing market failure in the availability of credit for certain categories of firms, especially SMEs - exacerbated by the current financial crisis. These are firms who can demonstrate commercial viability yet fail to obtain loans typically because of issues relating to risk management.

Based on international experience, a targeted SME Credit Initiative can facilitate access to credit for SMEs in these circumstances. Such an initiative is not a substitute for commercial bank lending nor does it facilitate credit for unviable companies. It would, however, place Irish firms on a more level footing with international competitors.

Delivering on Growth and Jobs

Delivering on growth and jobs is a national imperative.

Export-led growth is a *whole of enterprise* approach, and is the best route by which Ireland can return to *sustainable* growth over the coming years to 2015, generating employment for the longer

³⁵ Appendix VI contains details of short-term measures

³⁶ *Review of Labour Market Programmes*, Department of Enterprise, Trade and Employment (DETE)/ Forfás, 2010, and *Profile of Employment and Unemployment*, Forfás, 2010

term. It acknowledges that a competitive enterprise base will be at the core of Ireland's future economic growth and prosperity.

The ESRI macroeconomic forecasts, while optimistic, are achievable, if the right actions are taken and global growth recovers. The forecasts assume that correct but unspecified actions will be taken to improve access to credit and restore competitiveness³⁷. This report makes the actions explicit.

A whole of government response is required, with DETI as the principal government advocate for the enterprise sector, in order to deliver on the economy's potential for growth and employment.

Making it Happen

The recommendations contained in this report draw on existing strategies to highlight priorities for enterprise. They are focused on enhancing the business environment and are complemented by appropriate firm level interventions. They are soundly based on enhancing productivity, innovation, competitiveness and a strong enterprise mix that will build resilience in Ireland's enterprise base and deliver a sustainable basis for growth and jobs.

The recommendations are categorised according to the critical success factors, although each recommendation will have an impact on more than one factor. For example, a recommendation focused on education or skills development will positively impact on innovation, on productivity and on a strong enterprise mix.

In addition a small number of actions specific to the needs of *individual* sectors are included, informed by the analysis in Section B of the report, and are complementary to the overarching actions.

A mechanism for driving and monitoring implementation and to coordinate the actions of the relevant Government departments will need to be put in place³⁸.

It may take time for the impact of some of the recommendations to be fully realised, but the time to start addressing them is now.

³⁷ It also assumes that corrective action is effective in addressing the fundamental domestic issues underlying the ESRI forecasts

³⁸ The Cabinet Committee and Senior Official's Group on economic renewal is in place and may be an appropriate mechanism

Recommendations

The following recommendations have primarily been drawn from a range of enterprise related strategies and reports. Their inclusion here positions them as high priority and necessary to support a sustainable, competitive enterprise base that will deliver growth and jobs.

There are forty high level recommendations³⁹. All of them require implementation to be expedited now. Some of them will have immediate impact, removing specific barriers to growth and jobs, others will take some time to bear fruit but are essential if Ireland's enterprise base is to reach its full potential and drive economic recovery.

Delivering the optimum business environment requires a whole of government response - in this context, the agenda is compact. The Department of Enterprise, Trade and Innovation and its Agencies will lead on a number of the recommendations and will act as the advocate for enterprise in working with other Government Departments to address the remaining recommendations. In many instances a coordinated and collaborative approach is essential to achieve results.

Productivity

At the national level productivity can be enhanced through developments and investments in education and skills and physical infrastructures that enable efficient movement of goods, electronic services and people. Sustaining a whole of government response is required.

Education

1. Ensure that, through its strategy implementation, Higher Education incorporates enterprise and innovation alongside its education and research missions.

In particular, the further development of structured and accredited work programmes as an integral part of undergraduate and postgraduate programmes within the third level sector is needed to ensure that graduates are better equipped with appropriate skills for employment.

[Department of Education and Skills]

2. Implement the recommendations of the Project Maths Implementation Support Group in full and in a timely manner⁴⁰. In particular, priority should be given to the recommendations relating to ensuring that post primary students at all levels are taught mathematics predominantly by teachers who hold qualifications in mathematics and that the necessary resources for teacher training are in place to meet this objective.

[Department of Education and Skills/ National Council for Curriculum and Assessment]

3. Incentivise increased take up of higher level mathematics through the introduction of bonus points for entry to higher education for Higher Level Leaving Certificate Mathematics, to be implemented through the CAO system.

[Department of Education and Skills / Higher Education Institutes]

³⁹ Complemented by a limited number of sector specific recommendations to address barriers to growth and/or accelerate growth specific to an individual sector

⁴⁰ *Report of the Project Maths Implementation Support Group*, Department of Education and Skills, 2010

4. Design curricula, learning processes and assessment mechanisms at all levels of the education system (from primary on) such that they promote the development of:
 - Critical thinking;
 - Self-directed learning;
 - Communication and influencing skills;
 - Team working; and
 - Entrepreneurship and innovation skills.

[Department of Education and Skills]

Skills Development

5. Building on the current support for SME management development, allocate further funding for SME management development networks, as recommended by the Management Development Council.

[Department of Enterprise, Trade and Innovation/ Department of Education and Skills]

6. Build on the success of Enterprise Ireland's Leadership 4 Growth (L4G) programme in enhancing management capacity by:
 - Developing additional programmes which expose senior executives operating from Ireland to best practice, case studies and personal face-to-face contact with the executives and founders of successful innovative companies.
 - Placing an immediate focus on developing the skill sets and experience of CFOs and CEOs, in the area of raising international finance from Ireland to scale companies.

[Department of Enterprise, Trade and Innovation/ Enterprise Ireland]

7. Allocate State funding, with matching funds from the private sector where specified, for **in-employment training**, to meet identified training needs as per Expert Group on Future Skills Needs (EGFSN) reports and to equip individuals so that they can take advantage of opportunities as they arise. Particular emphasis should be accorded to the low-skilled and those in vulnerable employments.

[Department of Education and Skills/ Department of Enterprise, Trade and Innovation]

8. Expand supports for Lean, Six Sigma and transformational change programmes to support Irish based enterprises to enhance productivity, thereby accelerating growth, extending mandates and/or enabling achievement of scale.

[Department of Enterprise, Trade and Innovation/ Enterprise Ireland/ IDA Ireland]

Broadband and Physical Infrastructures

9. Ensure the policy environment and regulatory regime facilitate availability of and access to competitively priced, next generation broadband network (NGN) infrastructures and services to enhance productivity, stimulate and enhance innovation, and support future growth and employment. This is essential for future growth as pervasive next generation broadband access networks are critical to connect businesses and homes, and to future-proof for the evolving needs of enterprise.

Estimates of the investment required to deliver the essential NGN access network to ensure Ireland's leadership position range from €1.8 billion to €2.5 billion.

[Department of Communications, Energy and Natural Resources]

10. Maintain infrastructural capital investment programmes, in particular in roads, public transport and energy, prioritised in line with the needs of enterprise and international trade⁴¹.

Any reprioritisation of infrastructural spending and capital investment should align with the need to target investment at building critical mass and the competitive position of the Gateways so that they can attract and support enterprise development.

[Department of Transport/Department of Communications, Energy and Natural Resources]

11. Coordinate design and delivery of infrastructure projects to achieve efficiency gains and optimal integration and impact of infrastructure networks.

[Department of Transport/Department of Communications, Energy and Natural Resources]

Innovation

A business environment that is conducive to innovation facilitates collaboration and networking. It values (and invests in) education, knowledge and intellectual property and facilitates commercialisation. Recommendations to enhance the business environment to stimulate innovation and encourage innovation activity at the firm level are set out below.

RD&I Investment

12. Provide continued certainty to the enterprise and academic community that Ireland will maintain its focus on delivering a world class research base as envisioned in the *Strategy for Science, Technology and Innovation (SSTI)*.

In particular, planned public investment in STI as set out in the Government's Capital Programme 2010-2016 should be:

- Prioritised to meet the needs of current and future enterprise (including SMEs); and
- Maintained in the future with the objective of meeting the 3 percent of GDP set out in the Renewed Programme for Government.

[Department of Enterprise, Trade and Innovation]

⁴¹ Refer to Chapter 4 in the report

13. Take action, as recommended by the Advisory Council for Science, Technology and Innovation, and others, to continuously enhance the environment for business research and development in Ireland and to further strengthen the interaction between the business and academic sectors, including:

- In the context of priority setting, focus on centres of excellence with critical mass so that the full spectrum of research can be supported and to ensure that the interfaces between basic and applied research and the translation of research into innovation are working smoothly. In this regard, continue to enhance the industry-led competence centre model.

[Department of Enterprise, Trade and Innovation]

Intellectual Property

14. Continue to build a supportive framework that facilitates the optimum level of IP exchange and commercialisation while providing adequate protection for valuable knowledge.

Implementation of the recommendations of the Innovation Task Force with respect to IP and of the *Review of Supports for the Exploitation of IP from HE Research*, through the IP Policy Group and the IP Implementation Group, is critical in this regard.

[Department of Enterprise, Trade and Innovation]

Public Sector Procurement - Stimulating Demand-Led Innovation

15. Utilise public sector procurement in a more strategic way to stimulate innovation and enterprise development through:

- Implementing the recommendations of the Procurement Innovation Group to ensure that innovation is embedded into public sector procurement practices (in conjunction with the National Procurement Service (NPS) and the National Public Procurement Policy Unit (NPPPU)).

[Department of Finance / Whole of Government]

- Continuing to work (in conjunction with Enterprise Ireland) with the National Procurement Service (NPS) and the National Public Procurement Policy Unit (NPPPU) to optimise SME accessibility to public sector procurement contracts and to make effective use of the Department of Finance guidelines *Facilitating SME Participation in Public Procurement*.

[Department of Enterprise, Trade and Innovation/ Enterprise Ireland/ contracting authorities]

16. Implementing flagship public sector procurement initiatives which will act as demonstration models in international markets, and which will:

- Lead to the development of commercial products/services which leverage Ireland's strengths and which address key national level challenges such as (but not limited to) eHealth, ICT usage, renewable energy and energy security (including convergence);
- Stimulate multi-disciplinary collaboration and linkages between MNCs, SMEs and academia;
- Act as a demonstration model for innovative procurement practices within the public sector; and
- Demonstrate the innovative use of leading edge ICTs (incl. NGNs).

[Whole of Government/ Department of Enterprise, Trade and Innovation]

Entrepreneurship - Funding

17. Following a review of the Business Expansion Scheme (BES) and Seed Capital Scheme (SCS) that should facilitate the incorporation of any necessary measures to enhance their effectiveness, and subject to any revision of the EU Risk Capital Guidelines, seek EU Commission approval for the extension of these schemes beyond the current deadline of 31 December 2013.

[Department of Finance/ Department of Enterprise, Trade and Innovation]

18. In the interim, continue to promote the Business Expansion and Seed Capital schemes to increase their uptake by firms, individuals and private investors, and specifically:
- Publish a full listing of trades that qualify for BES/SCS on the Office of the Revenue Commissioners website⁴², including all trades under the Industrial Development (Services Industries) Order 2010.
 - Increase web-based promotion of the BES and the SCS, to be coordinated and led by a single existing body.

[Department of Enterprise, Trade and Innovation/ Enterprise Ireland/ County and City Enterprise Boards]

Entrepreneurship - Regulation

19. The Civil Law (Miscellaneous Provisions) Bill 2010 should reflect the recommendations made by the Law Reform Commission to reform bankruptcy law. The Bill should continue to distinguish those refusing to pay from those who cannot pay and should remove disincentives to entrepreneurship.

[Department of Justice and Law Reform/ Department of Enterprise, Trade and Innovation]

Regulation

20. Mandate the various regulatory bodies to employ regulation as a strategic policy instrument to promote innovation (for example through standard setting). Utilise the Annual Regulatory Forum as a mechanism to increase levels of understanding and sharing of best practice in Smarter Regulation and associated risk assessment and risk management. *[see also number 26 - reduction in administrative cost reduction of regulation]*

[Department of the Taoiseach/Whole of Government]

Incentivising RD&I - Taxation

21. The R&D tax credit should be capable of being taken 'above the line' for *all* companies⁴³.

[Department of Finance]

⁴² [http:// www.revenue.ie](http://www.revenue.ie)

⁴³ 'Above-the-profit-line' means allocating the 'credit' received directly against costs incurred. Currently, the R&D tax credit which is set against overall corporation tax is 'below the profit line' and it is contended that it is not factored into the evaluation of R&D proposals in instances where corporate decisions are made based on costs 'above the profit line'

Costs

Over recent years, Ireland's business costs grew to be considerably out of line with competitor countries. Recent price falls in Ireland have corrected this cost differential to some degree but these may prove to be a cyclical response to the downturn. A whole of government response is needed to ensure a sustainable, structural change to costs of doing business relative to competitor countries, and the recommendations for action are set out below.

Labour Costs and Flexibility

22. Develop a national policy to increase labour market flexibility with the objectives of restoring **labour cost competitiveness** and incentivising work and recruitment. The policy should incorporate aspects of:

- Social welfare;
- The national minimum wage;
- Maintaining a competitive tax wedge;
- Professional fees; and
- Other wage setting mechanisms in the economy (e.g. JLCs, EROs and REAs, as well as other local bargaining mechanisms in specific sectors - including retail / tourism).

[Department of Enterprise, Trade and Innovation/ Department of Finance/ Department of Social Protection/ Department of Justice and Law Reform]

Competition Policy

23. Progress implementation of the recommendations of the Competition Authority as appropriate - priority areas in this regard are professional services⁴⁴ and medical services.

[Whole of Government]

24. Continue to actively promote pro-competitive policies and ensure that new legislation and/or regulations relevant to enterprise are 'competition proofed' given that competition policy is central to maintaining a dynamic, efficient and competitive enterprise environment.

[Whole of Government/ Department of Enterprise, Trade and Innovation]

The Tax System

25. It is important that any proposals to increase taxation made in response to the need for fiscal adjustment are done in the least harmful way to economic growth and are in line with the OECD tax hierarchy for growth⁴⁵.

- The business tax burden should not increase as this would increase the risk of delaying future economic recovery; and
- Any changes to taxation should be in terms of broadening the base in line with the OECD tax hierarchy for growth and should not result in increased marginal income tax rates.

[Department of Finance]

⁴⁴ Particularly the legal profession

⁴⁵ The OECD Hierarchy outlines that increases to corporate taxes are the most harmful for growth, followed by personal income taxes, with consumption taxes and recurrent taxes on immovable property being the least harmful. *Economic Policy Reforms: Going for Growth: OECD, 2009*

Regulation

26. Expedite the implementation of the Cross Departmental process to reduce the administrative costs of regulation by 25 percent, by 2012.

[Department of Enterprise, Trade and Innovation/ Whole of Government]

Waste

27. Ensure that Ireland has appropriate waste management infrastructure in place to meet the needs of enterprise. Waste charges to business should reflect the need to deliver cost competitive solutions and optimal environmental performance, while extracting maximum economic value from waste as a resource.

[Department of the Environment, Heritage and Local Government]

Local Authority Charges and Commercial Rates

28. Continue efforts to minimise Commercial Rates and Local Authority charges:
- Acknowledging the constrained budgetary environment, this could be done through efficiency measures and through adoption of user pay principles which shift the cost of delivering services to those who use them.
 - Broadening the tax base at the local level should also be considered in this regard.

[Department of the Environment, Heritage and Local Government]

Energy

29. The following measures can help to improve Ireland's energy costs position relative to competitor countries:

- Continue to support the Commission for Energy Regulation (CER) in bringing the differential in controllable domestic costs (i.e. non-fuel costs) into line with costs in Ireland's main competitor countries.
- Calibrate the supports for renewable technologies to ensure that Ireland's targets are achieved while minimising the costs to enterprise⁴⁶.
- Review the subsidies provided to peat while seeking to minimise the costs to energy users⁴⁷.
- Working with the EU, ensure that Ireland is best positioned to avail of EU support for investment in strategic energy infrastructure.

[Department of Communications, Energy and Natural Resources]

30. Further develop, coordinate and promote advisory and financial supports for energy efficiency initiatives within firms which have the dual impact of realising cost efficiencies and reducing emissions.

[Department of Communications, Energy and Natural Resources/ Sustainable Energy Authority of Ireland/ Enterprise Agencies]

⁴⁶ Directive 2009/28/EC of the European Parliament and of the Council *on the promotion of the use of energy from renewable sources*

⁴⁷ *Statement on Energy*, National Competitiveness Council, 2009

Enterprise Mix

Ireland's economic success in international markets has been driven primarily by a limited number of sectors and strong trade or intra-firm relationships with a limited number of countries.

Building a strong enterprise mix can ensure that Ireland is not overly reliant on these limited avenues for future growth and/or employment, is better protected from external shocks, and further underpins a sustainable model for economic growth. A stronger enterprise mix can be realised if the recommendations for action set out below are implemented:

International Trading Relationships

31. Proactively develop Ireland's trading relationships with new and emerging markets in a strategic way by:

- Working to develop Ireland's double taxation agreement (DTA) network, ensuring that agreements are in place with existing and potential trading partners and that existing agreements do not impose any barriers to growth; and
- Reviewing and streamlining existing visa requirements and processes for Ireland and working to address the challenges arising from non-membership of the Schengen Agreement.

[Department of Enterprise, Trade and Innovation/ Department of Justice and Law Reform/ Department of Foreign Affairs/ Department of Finance/ Department of Tourism, Culture and Sport]

Marketing Ireland

32. Develop and implement an overarching international marketing programme for Irish based enterprise such that:

- Government Departments and Agencies⁴⁸ communicate a cohesive and complementary suite of messages to market Ireland's enterprise strengths;
- Enterprise trade missions etc. are coordinated to have the maximum impact and benefit for Ireland and Irish enterprise; and
- Specific agency and sectoral branding initiatives complement and consolidate the overarching messages.

[Whole of Government: Department of Enterprise, Trade and Innovation/ Department of Foreign Affairs/ Department of Agriculture, Fisheries and Food/ Department of Tourism, Culture and Sport/ IDA Ireland/ Enterprise Ireland/ Shannon Development/ Bord Bia/ Tourism Ireland/ Culture Ireland]

⁴⁸ Including, Tourism Ireland, Bord Bia, IDA Ireland, Science Foundation Ireland, Enterprise Ireland

Succeeding in International Markets

33. Support Irish based enterprise to expand their international activities by:
- Strengthening in-company training and development provision for international marketing, brand management, and sales, incorporating language and market specific modules;
 - Facilitating a language and market specific skills intermediary service through Enterprise Ireland which can be made available to companies as required; and
 - Enhancing the resources dedicated to Enterprise Ireland's *International Graduate Programme* which provides a structured work placement programme in internationally trading indigenous firms for undergraduates/postgraduates to enable them to develop relevant marketing, logistics and language skills.

[Department of Enterprise, Trade and Innovation/ Enterprise Ireland]

Realising Potential - Enhanced Agency Collaboration

34. Further enhance inter-agency collaboration with a focus on:
- Provision of a seamless service to enterprise irrespective of firm size or ownership (indigenous/foreign);
 - The development of sectors;
 - Sharing of information (markets/sectors/research/economic) in a timely and systemised way to ensure that the enterprise development agencies are best placed to support the needs of enterprise; and
 - Communicating a common set of messages regarding Irish enterprise and the broader business environment nationally and internationally.

[Department of Enterprise, Trade and Innovation/ Forfás/ IDA Ireland/ Enterprise Ireland/ Science Foundation Ireland/ Shannon Development/ Údarás na Gaeltachta]

Realising Potential - Networks, Alliances and Collaborations

35. Across and within all business sectors firms are increasingly engaging in collaborative activities/networks with academic institutions and other companies to access new knowledge/specialist expertise, improve RD&I outputs, and streamline processes to develop new products and services.

Existing supports should be reviewed and/or enhanced (as appropriate) to ensure that they facilitate/promote the development of networks and collaborative projects to achieve specific economic objectives; enhanced productivity, increased exports and/or innovation. For instance, through facilitating the pooling of grants for feasibility studies.

[Department of Enterprise, Trade and Innovation]

Realising Potential - Ownership

36. Ensure that there is strong and clearly designated ‘ownership’ at Department and Agency level to deliver a cohesive, coordinated and comprehensive approach to develop sectors that cross areas of responsibility at Government Department/Agency level. These would include Clean Technology, Creative Industries, Marine, Food, Education Services and Healthcare Services (eHealth)⁴⁹.

Consideration could also be given to the appointment of a Cluster Development Manager (on a pilot basis to any of these sectors), co-funded by Government (through its agencies) and the private sector.

[Department of Enterprise, Trade and Innovation/ Whole of Government]

Evaluation of Programmes

37. Develop and implement a system wide evaluation framework (incorporating enterprise policy, programme and project elements). The framework will be designed to measure ex-ante and ex-post the appropriateness, effectiveness and efficiency of policy objectives/delivery.

The programme evaluations should ensure that the programmes managed by the enterprise development agencies operating under DETI’s remit deliver on defined objectives, and that they are efficiently and effectively delivered. As a priority at least one programme evaluation should be carried out by mid 2011.

[Department of Enterprise, Trade and Innovation]

Addressing Immediate Challenges

The measures identified in this report provide the basis for a return to sustainable economic growth and job creation. However, there is a need to address ongoing and immediate challenges arising as a direct result of the current economic downturn, primarily:

- Enhancing employability of the unemployed; and
- Access to Finance as cash flow is one of the single biggest challenges currently facing enterprise, particularly SMEs.

A wide range of actions have been taken by the Government to address these issues and further measures in this regard include the following:

Enhancing Employability of the Unemployed

38. Ensure that labour activation programmes aimed at enhancing the employability of the unemployed are designed to deliver enterprise relevant outcomes and increased productivity as set out in Forfás and EGFSN reports.

Expand the existing Work Placement Programmes for graduates (1,000 places) and school leavers (1,000 places) which provide work experience for up to 9 months and allow participants to retain their social welfare entitlements where they are unpaid. In order to ensure the success of the programme, barriers which limit participation and which discourage enterprises from providing placement opportunities should be removed.

[Department of Enterprise, Trade and Innovation/ Department of Social Protection/
Department of Education and Skills]

⁴⁹ *Food Harvest 2020*, published July 2010, recommended a collaborative approach to monitor progress, and to facilitate joined up action

Access to Finance

39. Continue to advocate for an appropriate risk sharing Credit Initiative in the context of enhancing access to finance for commercially viable SMEs.

[Department of Enterprise, Trade and Innovation/ Department of Finance]

40. Extend the voluntary 15 day rule relating to prompt payments to the HSE, Local Authorities and State Agencies which would have an immediate and positive impact on cash flow for suppliers.

[Department of Finance/ Whole of Government]

Recommendations Specific to Individual Sectors

Comprehensive analysis of sectors in Ireland demonstrates that *all* sectors are evolving and that the critical success factors apply across the entire enterprise base.

The recommendations above are directed at improving the business environment such that all firms can thrive, and at developing capability at firm levels. As such they are not specific to any *individual* sector. However, in some instances the sectoral analysis indicates the need for *supplementary* action to address barriers to growth and/or accelerate growth specific to an individual sector. Actions to address sector specific skills needs are not listed - they are available in relevant reports published by The Expert Group on Future Skills Needs (Appendix IV).

ICT Services

- If Ireland is to position itself as a centre of excellence for software engineering and development, it needs to ensure that its corporate tax system remains internationally competitive. In this context, software firms have highlighted a disadvantage relating to taxation of royalties. It is recommended that:
 - A system of pooling for royalties is implemented which would allow companies to offset the excess credits incurred in respect of royalty tax withheld in one country against the net Irish tax payable in respect of royalties earned in another country.

[Department of Finance]

Healthcare Services

- Expedite the proposed Health Information Bill as a matter of priority.

[Department of Health and Children]
- Streamline the ethics approvals process, and enable electronic submissions, so that the principles of single opinion and parallel review apply to the approval of all clinical research carried out in Ireland.

[Department of Health and Children]
- Develop and promote Ireland as a test bed for the development of new products and services in healthcare delivery involving all relevant stakeholders, patients, healthcare providers, Government Departments and Agencies⁵⁰.

[Department of Enterprise, Trade and Innovation/ Department of Health and Children]

⁵⁰ Building on the work of the *Nestling* (www.netwellcentre.org/projects) and *Technologies for Independent Living* (www.trilcentre.org) initiatives (involves ICT, Healthcare, Medical Devices sectors)

Agri-Food

- Address fragmentation in the primary production and food processing industries (for example, through consolidation and collaboration) to enable the Irish food industry to compete more effectively on international markets.

[Department of Agriculture, Fisheries and Food/ Department of Enterprise, Trade and Innovation/ Enterprise Ireland]

- Streamline and coordinate supports for the food sector in Ireland and provide clarity to stakeholders in the agri-food sector regarding available supports, ensuring that they are accessible, effective and responsive to industry and firm growth needs.

[Department of Agriculture, Fisheries and Food/ Department of Enterprise, Trade and Innovation]

- A concerted and coordinated approach is required involving primary producers, industry, Departments and State agencies to the development of a food sector so that efficient and environmentally-friendly production, innovation in value added products, acting 'smartly' and effective marketing policies deliver sustainable growth in quality segments of the international marketplace.

[Department of Agriculture, Fisheries and Food/ Department of Enterprise, Trade and Innovation/ Bord Bia/ Enterprise Ireland and Bord Iascaigh Mhara]

Clean Technologies

- Green public procurement in Ireland and internationally can create significant opportunities for enterprises⁵¹. Ireland needs to implement green public procurement as a matter of priority.

[Department of Finance/ National Public Procurement Policy Unit]

- To facilitate growth and development of the clean tech sector it is essential that measures are taken to:
 - Maintain investment in the enabling electricity network and expedite the processing period for grid connections.
 - Resolve regulatory and planning barriers delaying the development of renewable energy projects.

[Department of Communications, Energy and Natural Resources/ Department of the Environment, Heritage and Local Government]

- Focus on export markets with high potential in eco-construction products and services and resource based technologies in water, waste and renewable energies.

[Department of Enterprise, Trade and Innovation / Enterprise Ireland]

⁵¹ Green public procurement is a process whereby states meet their needs for goods, services, works and utilities by seeking and choosing outcomes and solutions that have a reduced impact on the environment throughout their whole life-cycle, as compared to comparable products/ solutions. A procurement procedure will be considered as green only if it has led to the purchase of a substantively 'greener' product, and only if the environmental characteristics of this product go beyond compliance with European or national environmental legislation. *Collection of statistical information on Green Public Procurement in the EU: Invitation to tender*, European Commission, 2007

Marine and Maritime

- Advance the *SmartOcean Strategy* and the Offshore Renewable Energy Development commitments, which includes investment in flagship projects such as SmartBay and the grid connected Ocean Energy test site in Belmullet, to facilitate a diverse range of companies to access ocean RD&I and test platforms where they can test new concepts, equipment, solutions and services in a real ocean situation.

[Department of Communications, Energy and Natural Resources/ Department of the Environment, Heritage and Local Government]

- Support the emergence of a marine spatial planning framework for Ireland and the implementation of the EU Marine Strategy Framework Directive.

[Department of Communications, Energy and Natural Resources/ Department of the Environment, Heritage and Local Government]

Creative Industries

- Establish a national Creative Alliance network with membership from government, industry, education, State Agencies and the not-for-profit sector. Key objectives of the Creative Alliance should be to:

- Facilitate networking and collaborations across the creative industry sub-sectors, such as digital media (including audiovisual content creation) and design, particularly across MNCs, SMEs, sole traders and academia;
- Promote greater linkages between creative design companies with software and manufacturing companies, particularly in relation to product design and development;
- Develop/promote education and training initiatives to increase capacity and skills in the areas of design and innovation; and
- Develop the capacity of companies in the creative sector to engage in international trade through exporting and greater involvement in the tourism sector.

[Department of Enterprise, Trade and Innovation/ Department of Tourism, Culture and Sport/ Culture Ireland]

Tourism and Hospitality

- Firms and industry groups maintain the air travel tax is harming competitiveness in the sector and have called for its elimination⁵². The air travel tax was introduced in 2009 and it is timely to review its impact as called for by the Commission on Taxation⁵³.

[Department of Finance]

- Significant additional capacity in hotels is creating challenges for the sector, particularly among traditional operators. The potential to allow change of designated use for the continuation of capital allowances (for example, for health and education related activities) where there is overcapacity in certain areas should be explored.

[Department of Finance]

⁵² *Survival, Recovery and Growth - A Strategy for Renewing Irish Tourism 2009 - 2013, New Horizons for Irish Tourism - Mid Term Review*, Report of the Tourism Renewal Group, 2009

⁵³ *Commission on Taxation Report*, 2009

- Coordinate public investments in transport to improve internal connectivity and facilitate tourism travel around Ireland outside of the main urban areas.

[Department of Transport]

Retail and Wholesale

- The current retail planning system, through a variety of mechanisms, makes it difficult for new retailers to enter the Irish market, and for existing retailers to expand. The upcoming Review of the Retail Planning Guidelines should explicitly require local authorities to promote competition and choice.

[Department of the Environment, Heritage and Local Government]

1 Enterprise Policy in a Changed Environment

Introduction

Ireland is facing significant challenges arising from the most serious global recession since the 1930s. A review of Ireland's enterprise policy is timely as we seek to reposition Ireland for growth in what is a particularly uncertain environment.

A supportive enterprise policy is crucial to delivering on the objectives of the Smart Economy and Programme for Government. *Building Ireland's Smart Economy - A Framework for Sustainable Economic Renewal* was published in December 2008 and outlines the Government's programme for medium-term economic recovery. The Smart Economy Framework is centred on five key action areas:

- Securing the Enterprise Economy and Restoring Competitiveness;
- Building the Ideas Economy - Creating 'The Innovation Island';
- Enhancing the Environment and Securing Energy Supplies;
- Investing in Critical Infrastructure; and
- Efficient and Effective Public Services and Smart Regulation.

This report is focused on the role of enterprise policy within the context of the Smart Economy. It recommends the actions needed to ensure a competitive, sustainable enterprise base that will deliver growth and jobs within the medium-term to 2015. It takes into account immediate short-term needs, the scale of the unemployment challenge, as well as global and domestic economic environments.

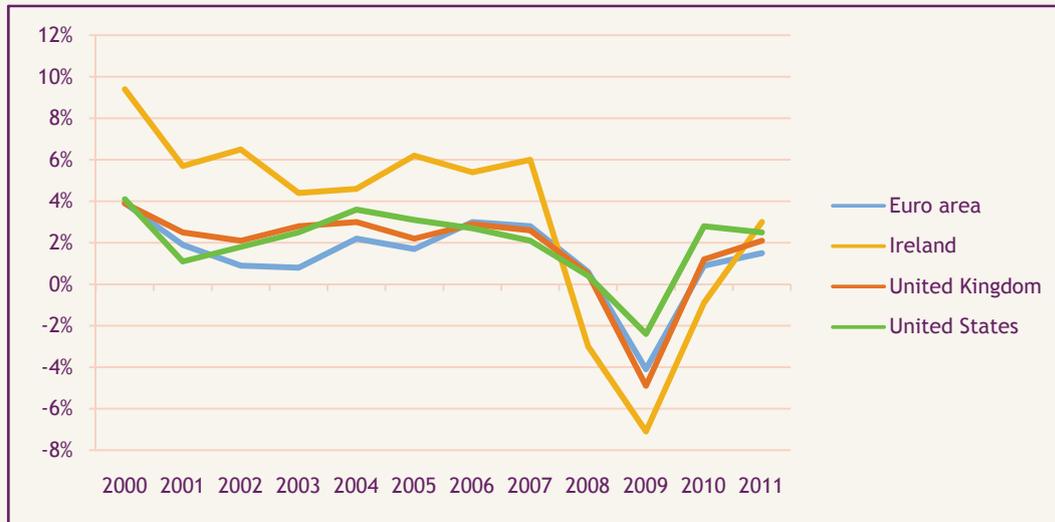
The report draws upon the research and recommendations contained in a range of enterprise related strategies that have been published over recent years, including *Ahead of the Curve*, the *Strategy for Science, Technology and Innovation* and the *National Skills Strategy* (Appendix IV). It also builds upon the *Report of the Innovation Taskforce - Innovation Ireland*, which was launched earlier this year by the Taoiseach. The views of industry are garnered on an ongoing basis through a number of channels, including the Enterprise Feedback Group, the Innovation Task Force, the enterprise development agencies, and contributions to sector specific studies.

The Scale of the Challenge

The essential facts of the recession have been widely reported upon - the adverse impact on employment, unemployment, economic growth and incomes are given daily coverage. The economy is estimated to have shrunk in GNP terms by 13.8 percent over the period 2007-2009⁵⁴.

⁵⁴ *Quarterly National Accounts*, CSO, June 2010

Figure 1: Real GDP Percentage Change over Previous Year



Source: Eurostat, 2010 (2010 and 2011 are forecasts)

Ireland's GDP growth declined sharply with the onset of the global economic recession, following an era of sustained and exceptional economic growth (Figure 1). The banking system is weighed down by heavy losses in the property market and the public finances have contracted sharply. Unemployment has almost tripled⁵⁵ since 2007, and government debt has more than doubled in the same time⁵⁶.

It is not the intention to dwell on these facts - but more to learn from what went wrong with Ireland's growth model over the past years, and to inform the best option for recovery.

Explaining the Recession

Ireland could be described as the archetypal small open economy (SoE), being one of the most globalised countries in the world. It is open to, and reliant on trade; has relatively small levels of domestic demand and facilitates the movement of capital and labour into and out of the economy. SoEs differ from large economies such as the US, China and Germany in that their domestic economies are not large enough to generate sufficient demand to support a full range of economic activities and cannot be depended upon as a long-term, sustainable source of economic development.

The benefits which accrued as a result of Ireland's membership of the EU, allied to strong cost competitiveness and the investment, profits and spillovers from the FDI sector were successively built upon, with prudent investments being made in human and physical capital, and the introduction of an enterprise-friendly taxation regime. These policies resulted in a significantly improved infrastructure, high quality skills and research and development activity and yielded economic growth.

⁵⁵ Unemployment rose from 4.5 percent in Q4 2007 to 12.9 percent in Q1 2010. *Quarterly National Household Survey*, CSO, various years

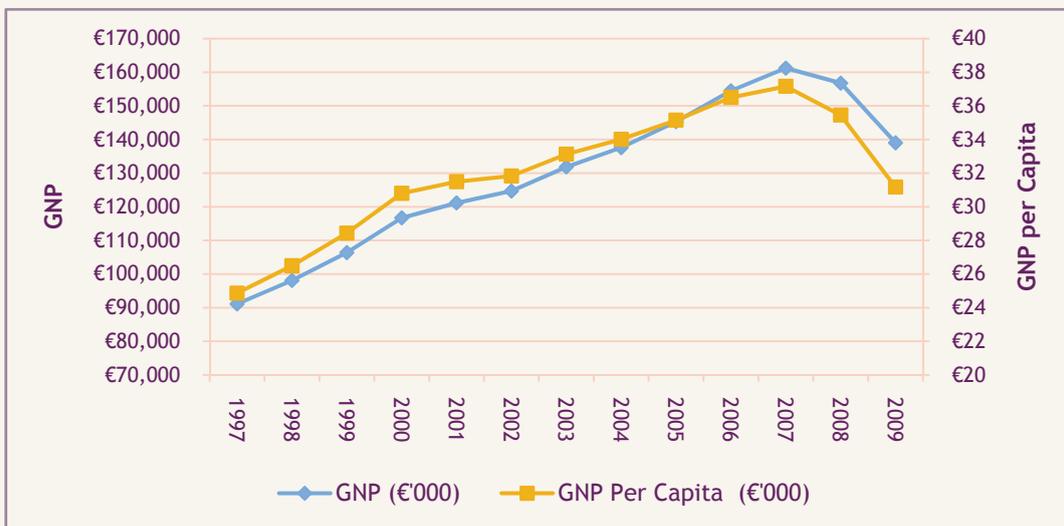
⁵⁶ General Government Consolidated Debt as a percentage of GDP. Irish Government debt increased from 25 percent of GDP in 2007 to 64 percent in 2009, Eurostat

Between 1994 and 2001, Ireland experienced one of the most prolonged periods of high economic growth recorded in any developed economy in the post-war period. Output doubled in a decade⁵⁷, and ‘full employment’ was reached by 2001⁵⁸. As a result, incomes rose dramatically on both an overall and per capita basis (Figure 2).

At the forefront of this exceptional performance was Ireland’s exporting sector. Productivity in Ireland’s exporting sector increased substantially in the second half of the 1990s primarily as a result of a combination of the pro-enterprise policies outlined above and concurrent favourable exchange rate movements.

That era of economic growth has now come to an end however - although the seeds were already sown in the early part of the last decade.

Figure 2: GNP and GNP per Capita in 2007 Constant Prices, 1997-2009



Source: CSO, National Accounts, Forfás Calculations

A Shift to Domestic Consumption Led Growth

In 2001 the nature of Ireland’s economic growth fundamentally changed. The events of September 11th and the bursting of the dotcom bubble saw a fall in global demand, and resulted in what transpired to be a brief global downturn. Although Ireland’s exporting sector remained resilient throughout this downturn, events and policies conspired to engineer a shift in the makeup of the Irish economy.

The global downturn induced a period of low interest rates across the world intended to provide stimulus to the global economy⁵⁹. This period of low interest rates, allied to record income levels⁶⁰, a pro-cyclical domestic fiscal policy, and a number of tax incentives designed to boost the domestic construction sector, combined to create a consumption bubble in Ireland.

⁵⁷ *National Income and Expenditure Tables*, CSO, various years (GDP at constant market prices, 1994-2004)

⁵⁸ *Quarterly National Household Survey*, CSO, 2001

⁵⁹ Since Ireland joined the single European currency, monetary policy is no longer within domestic control

⁶⁰ Which at the time, were justified on the basis of productivity gains

The result was most clearly visible in the domestic property market, which witnessed an unprecedented spike in activity and prices. The share of Ireland's economy directly accounted for by the construction sector grew from 5.5 percent of GNP in 1996 to a peak of 10 percent in 2007⁶¹; construction also accounted for almost 13 percent of total employment, and 22 percent of male employment by the second quarter of 2007⁶².

The booming construction sector had adverse effects across other sectors of the economy, drawing in human and capital resources from other potentially more productive and sustainable sectors. Instead of exports being a primary source of economic growth, in the years after 2001 activity in the domestic economy became the chief driver of GDP. This had a number of destabilising effects.

Deterioration in Cost Competitiveness

Escalating house prices resulted in spiralling wage demands and contributed to levels of inflation which undermined competitiveness. The extended period of economic growth over recent years led to increases in the costs of doing business in Ireland - particularly in relation to key business inputs such as rents, pay and incomes, utilities and business services. This situation was exacerbated by other factors, for instance restrictive practices in the services sector which hindered competition⁶³, and increases in the cost of State-administered services⁶⁴. Figure 3 below shows the deterioration in Ireland's cost competitiveness.

Figure 3: Real Harmonised Competitiveness Indicator, 2000-2010 (Jan 2005=100)



Source: Central Bank of Ireland

⁶¹ *National Income and Expenditure Annual Results*, CSO, June 2009

⁶² *Quarterly National Household Survey*, CSO, Q2 2007 (September 2007 Release)

⁶³ See various Competition Authority Reports, including; *General Medical Practitioners* December 2009 (Part I & II), July 2010 (Part III); *Dentists*, October 2007; *Solicitors & Barristers*, December 2006

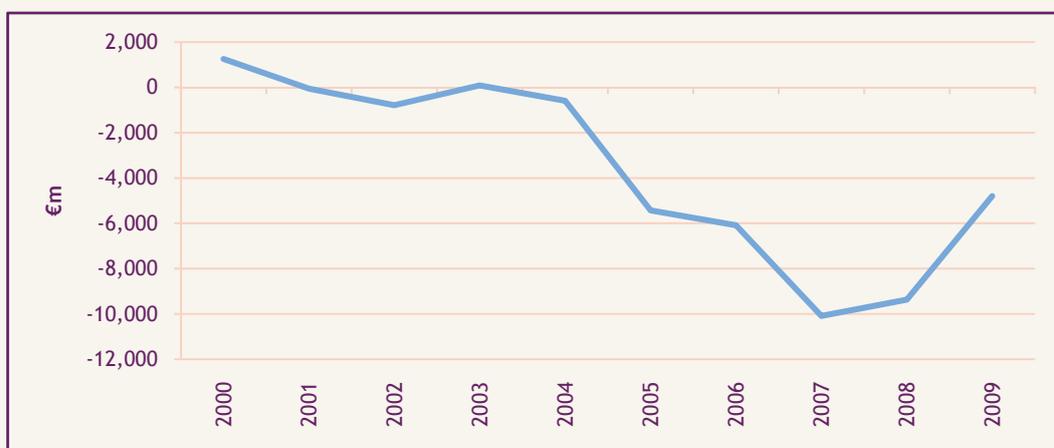
⁶⁴ *Cost of Doing Business in Ireland 2010 - Volume 1*, NCC, July 2010

Deterioration in Public Finances

Government finances became over-reliant on revenue generated during the construction boom - in particular on income earned from stamp duty and other consumption taxes such as VAT. Rather than acting as an automatic stabiliser once the recession hit, this over reliance on a single source of income weakened the economy's ability to absorb the impact of the global downturn.

This growing dependence on the domestic economy as a source of growth is well illustrated in the deterioration in Ireland's Balance of Payments over the period 2001-2008 - at a time when the economy was still growing. This reaffirms the unsustainable nature of Ireland's economic growth during this period (Figure 4).

Figure 4: Ireland's Balance of Payments Position (Current and Capital Account) €m



Source: Eurostat

The Credit Squeeze

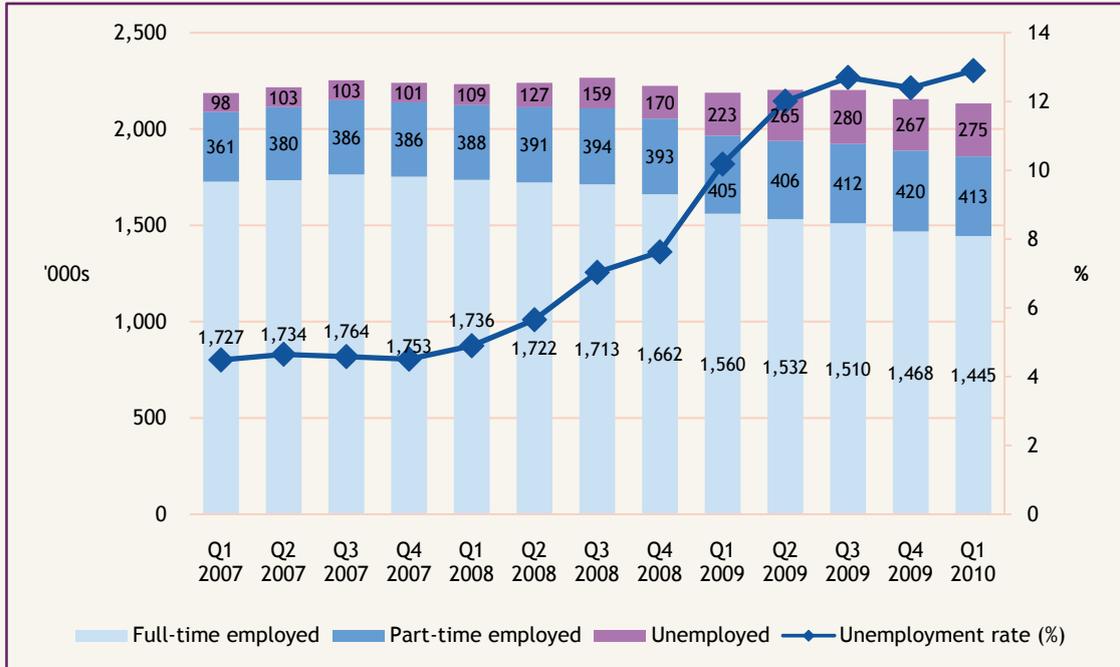
As the speculative value of property soared, Irish banks borrowed credit on international markets in order to invest in Irish property. Increasing property values encouraged more people to invest and also drew workers into the construction sector, enticed by the higher than average wages on offer. Indeed, at the height of the boom many individuals chose to seek employment (often unskilled) in the construction sector as a result of the wages on offer, rather than pursuing the alternative path of attaining a formal education qualification. Private capital was diverted from other areas of the economy as investors sought quick wins in the property market.

The global financial crisis in 2008 resulted in the temporary freezing of international credit flows and the collapse of global consumer and business confidence. Almost overnight, the Irish property market came to a standstill, as the external shock exposed domestic weaknesses. Houses were no longer selling, property values fell sharply and the construction of new houses almost completely ceased. Bad debts within the banking system began to mount as it became increasingly apparent that the assets which underpinned lending had been grossly overvalued; international credit to the Irish financial system dried up as the scale of the problem became obvious. All of this rapidly impacted upon the wider economy, resulting in a general collapse in consumer spending, a rise in unemployment and a major deterioration in government revenue.

Unemployment and the Labour Force

The most noticeable and immediate impact of the recession has been seen in the labour market. The depth of the recession is perhaps best illustrated by the rapid increase in the unemployment rate - up from 4.5 percent in Q1 2007 to 12.9 percent in Q1 2010 (Figure 5).

Figure 5: Labour Market Trends and Unemployment Rate, 2007-2010



Source: CSO Quarterly National Household Survey (QNHS)

There are signs that the recession is beginning to bottom out: recent data from the Central Statistics Office (CSO) shows a return to economic growth for the first time since the last quarter of 2007⁶⁵ and the rate of increase in unemployment is also slowing⁶⁶. At 12.9 percent, unemployment is also less than previously anticipated by many forecasters⁶⁷.

The Road to Recovery

A confluence of factors contributed to Ireland's economic situation today. The evidence shows that sustainable economic growth cannot be achieved through reliance on the domestic economy. Instead, Ireland must return to the export-led growth model that proved so successful between the late eighties and 2001.

This report demonstrates that Ireland has significant potential and a strong basis for future economic growth and employment creation.

⁶⁵ According to the CSO's *Quarterly National Accounts* for Q1 2010, GDP grew by 2.7 percent compared with the previous quarter (although the figures also indicated a decline of 0.5 percent in GNP)

⁶⁶ *Quarterly National Household Survey*, CSO, Q1 2010

⁶⁷ For example, in May 2009 the ESRI's *Recovery Scenarios for Ireland* anticipated unemployment of 17.2 percent for 2010

2 Enterprise 2015 - Vision and Objectives

Vision and Objectives

A Sustainable, Competitive Enterprise Base will be at the core of Ireland's future Economic Growth

Productivity and Innovation will be at the core of enterprise in Ireland, enabling firms to capture international opportunities and to compete effectively on domestic markets providing quality employment and sustaining a high standard of living for all

Ireland will be globally recognised as the best place to locate, start and grow a business, driven by its creative and highly skilled people and 'can-do' attitude, and facilitated by an agile, pro-business government

The ESRI's macroeconomic model offers the best available quantitative summary of future growth potential of the Irish economy in the medium-term. If the world economy recovers significant momentum by 2011, the Irish economy (as long as it regains competitiveness) can be expected to grow quite rapidly in the 2011-2015 period, recovering some of the lost ground of the current recession. The recently published report *Recovery Scenarios for Ireland - An Update* indicates the potential growth for Ireland as outlined in Table 3⁶⁸.

Table 3: ESRI Recovery Scenarios for Ireland: An Update - Key Metrics (2011-2015)

		High Growth Scenario	Low Growth Scenario
		Average Annual	
GDP	(Ave Annual)	4.6 percent	3.2 percent
Export Growth	(Ave Annual)	8.4 percent	5.0 percent
Unemployment Rate	(Ave Annual)	4.8 percent	7.1 percent

⁶⁸ *Recovery Scenarios for Ireland - An Update*, ESRI, July 2010

The ESRI has produced two macroeconomic scenarios for Ireland: a High Growth Scenario predicated on the Irish economy responding to world economic growth and changes in competitiveness in the same way as it has done over the last twenty years; and a Low Growth Scenario where the Irish economy records lower rates of growth over the medium-term for a number of reasons (e.g. because the export sector suffers long-term damage or because structural unemployment remains high due to a failure of labour market policy).

Economic forecasting is not an exact discipline - and this is evidenced by the number of differing estimates of Irish economic growth available today. All forecasts are based upon a suite of assumptions.

The ESRI forecasts used here illustrate the potential of the Irish economy and assume corrective policy actions will be taken, and will be effective.

The High Growth Scenario although optimistic, should be regarded as achievable if the right actions are taken and a favourable external economic environment materialises.

Exports - the Key Driver

Income generated by exports⁶⁹ will be the key driver of sustainable growth for Ireland in the future. It will provide the stimulus for growth across *all* other sectors, boosting secondary employment in the domestic market, stimulating consumer confidence and providing increased opportunities for locally trading businesses.

An export-led enterprise policy that stimulates the domestic economy and that is based on innovation, productivity, cost competitiveness and a strong enterprise mix provides the strongest basis to generate growth and jobs over the medium-term.

Export growth does not just happen. As alluded to earlier, an increase in global demand and growth is a prerequisite - and one over which Ireland has no control.

Within the domestic economy however, other fundamental prerequisites to success require decisive actions to:

- Restore fiscal stability⁷⁰ A return to macroeconomic stability will improve investor and consumer confidence, foster demand and boost enterprise revenue
- Improve access to credit So that firms will have the cash needed to weather the recession and to invest for future growth - in enhancing productivity, in embracing innovation and in targeting new markets
- Restore international competitiveness This is critical for the attraction of foreign investment, and for the success of Irish firms competing on international and domestic markets.

⁶⁹ Exports include foreign earnings - based on the WTO modes of international trade for services - and captures activities such as Tourism, Education Services to foreign students, electronic trade and ODI

⁷⁰ The restoration of financial stability is critical, but is outside the scope of this review and action is being taken to address this issue

The forecasts assume that actions taken to address these fundamental domestic challenges will be effective. This report identifies actions required to address competitiveness and to improve access to credit. The restoration of financial stability is critical, but is outside the scope of this report and action is being taken to address this issue.

Locally Trading Firms - An Essential Component

It is worth highlighting the fact that firms that continue to trade locally play a major role that can be pivotal in determining the performance of Ireland's entire economy - particularly if they are highly productive and innovative. Locally available, competitive and efficiently produced goods and services can result in increased Irish Economy Expenditure (IEE)⁷¹ and contribute to an internationally competitive operating environment for all businesses. In the context of an increasingly mobile and international workforce, the quality of personal services, entertainment, restaurants, shops, education etc., can be a significant factor influencing where people choose to live and work.

Employment

The ESRI High Growth Scenario suggests that by 2015, Ireland could have almost 2 million (1,994,000) people in employment, an increase from the 1.86 million working today. It is anticipated that economic growth will precede employment growth in the short-term; and that growth will be realised through productivity improvements in the first instance. This is not an unusual situation as a country takes steps toward economic recovery in a post-recession era. It has been evidenced in Ireland's past and in other economies, including, for example, Finland in the 1990s.

Job creation can be expected through a combination of ongoing replacement demand as older workers retire and exit the labour force and increasing demand for labour as the economy recovers.

The enterprise development agencies responsible for supporting export-oriented firms play an important role. Enterprise Ireland and IDA Ireland's objective is to support the creation of 135,000 direct new jobs over the period to 2015 (Table 4), and the target for the Tourism sector is 15,000 new jobs over the same period. Maintaining existing employment is an equally important consideration in achieving forecast growth and the agencies' focus on supporting *existing* firms to continuously evolve and enhance their capabilities is critical in this regard.

Table 4: Annualised Enterprise Development Agency Employment Objectives

2010	2011	2012	2013	2014	2015	Total
11,525	16,460	21,400	26,340	29,635	29,635	135,000

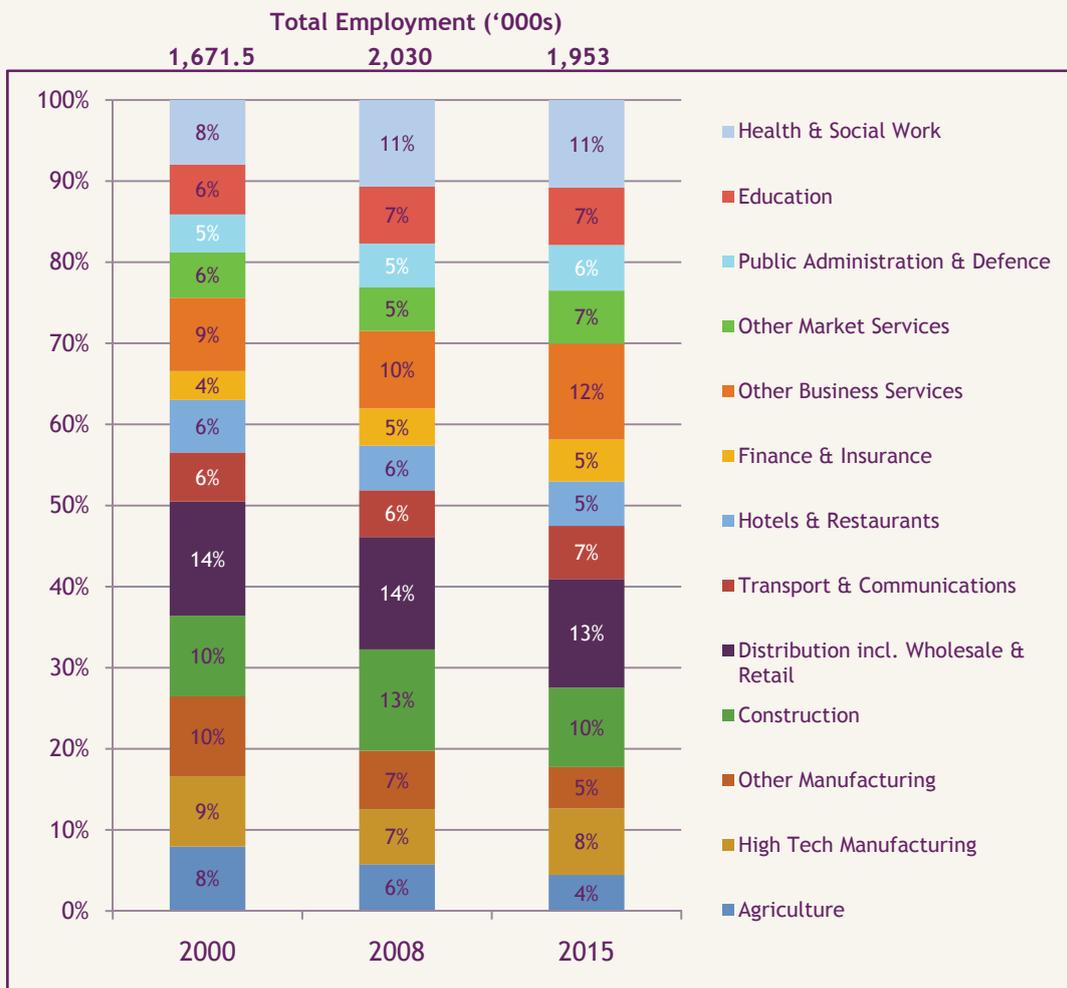
Source: IDA Ireland, Enterprise Ireland

⁷¹ IEE refers to domestically sourced goods and services, and salaries/wages by agency assisted exporting firms. Exporting firms source goods and services from international as well as domestic locations and in this context Ireland's relative cost competitiveness is an important factor in influencing exporting firms' purchasing decisions

This report on enterprise policy places export-led growth at its centre and also considers the role and needs of *all* sectors operating within Ireland's economy.

Looking across the entire enterprise base, ESRI/FÁS sectoral employment forecasts to 2015⁷² indicate that the underlying shift toward a higher contribution from services is set to continue, so that approximately 80 percent of the workforce will be employed in services⁷³ (60 percent excluding public sector). This should not be interpreted to mean that Ireland is no longer 'in manufacturing'. High value added, productive and RD&I intensive manufacturing will continue to contribute significantly to Ireland's exports and growth⁷⁴.

Figure 6: Employment Analysis by Sector - to 2015 (forecast)⁷⁵



Source: ESRI/ FÁS, 2010, Occupational Employment Forecasts 2015

⁷² Occupational Employment Forecasts 2015, ESRI/ FÁS 2010

⁷³ Including construction as a service industry

⁷⁴ The Report of the High Level Group on Manufacturing, DETE & Forfás, 2008

⁷⁵ The forecast for 2015 included in the ESRI/FÁS report Occupational Employment Forecasts, 2015 which was published in March 2010 was based on assumptions in evidence during the period leading up to its publication. ESRI's latest report Recovery Scenarios for Ireland- an Update published in July forecasts employment of 1.994 million by 2015. However a sectoral breakdown is not available

At a sectoral level the ESRI/FÁS forecasts indicate that by 2015 (Figure 6)⁷⁶ :

- Employment in a range of services activities, including communications, business, finance, insurance and other market services is forecast to surpass pre-recession levels, as is employment in high technology manufacturing and transport;
- More mature sectors including tourism and hospitality, agri-food, retail and distribution and construction are likely to resume growth but are unlikely to be fully restored to pre-recession levels;
- Employment in health, education and public administration and defence provides a significant contribution to employment and is likely to remain relatively unchanged (including public and private sector); and
- Sectors which are likely to continue to decline in employment terms include agriculture and low value add manufacturing.

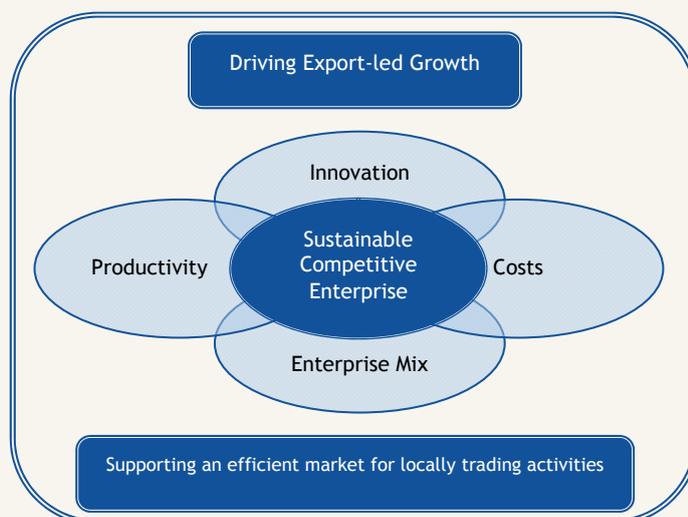
Forecasting employment trends is complex. At a sectoral level, the degree of uncertainty is heightened, and sectoral employment forecasts are subject to differing views.

For example, the levels of employment included in ESRI/FÁS forecasts for construction appear high - although growth in environmental goods and services may account for an element of anticipated future employment in this area. It is also difficult to predict with any degree of certainty the timing of employment growth in high technology manufacturing, given in particular, the specific global challenges facing pharmaceuticals regarding patent expiry. Food manufacturing has provided steady employment over the past decade and the ESRI/FÁS forecast indicates modest growth. However, if the right steps are taken, growth in this sector could be accelerated to take advantage of the significant potential offered by global shifts in socio-economic and consumption trends. While public sector employment is likely to remain static, the trend toward increased private sector provision in healthcare and education services and the potential for internationalisation indicates considerable future growth potential in these areas.

With these caveats in mind, the ESRI/FÁS employment forecasts provide an indication of where opportunities are likely to arise over the coming years to 2015 and of Ireland's likely future enterprise structure.

⁷⁶ Chapter 7 presents a more detailed overview of growth opportunities taking into account new and emerging potential and the focus of the development agencies (including those outside of DETI's remit)

The Critical Success Factors



A sustainable, competitive enterprise base that will deliver both growth and jobs will rely on four interlinked and complementary critical success factors:

<p>Productivity</p>	<p>At its simplest, productivity means producing more for less. Enhanced productivity contributes directly to GDP growth.</p> <p>Ireland’s overall productivity performance has deteriorated over the past number of years, and although an element of that may be as a result of the increased economic contribution from services, there is still room for improvement.</p>
<p>Innovation</p>	<p>Innovation is a broad concept and is relevant to all firms and sectors. It involves exploiting new ideas for commercial advantage and staying ‘ahead of the game’ with differentiated product and service offerings, innovative processes, and business models.</p> <p>In Ireland SMEs tend to be less innovation active.</p>
<p>Cost Competitiveness</p>	<p>A readjustment to Ireland’s cost competitiveness relative to competitor countries is a critical starting point to stimulating enterprise and employment growth. Structural changes to Ireland’s costs of doing business are needed if companies are to be successful trading in international markets.</p>
<p>Enterprise Mix</p>	<p>There is currently a high level of concentration in a small number of sectors and markets and on FDI for exports. This leaves Ireland somewhat vulnerable to global shifts. Ireland needs to build on existing strengths to:</p> <ul style="list-style-type: none"> ▪ Realise untapped potential in sectors; ▪ Expand into new markets; and to ▪ Accelerate the potential of the indigenous base, building on its evolving capabilities to realise a step-change in its contribution to growth and exports.

A Whole of Enterprise Approach

Supporting these critical success factors represents a *whole of enterprise* approach. It takes into account the needs of firms that trade internationally, those that currently serve local markets with potential to internationalise, and those that will continue to play a key role in serving local demand although these formerly discrete distinctions are becoming increasingly blurred over time.

It acknowledges and appreciates that sectors contribute differently to economic growth - through value added, exports, employment and/or IEE - and each has an important role to play in Ireland's economic fabric. It highlights how different sectoral categories should be supported - ranging from effective actions at the level of the business environment that would enhance competitiveness and competition, through to direct interventions at the level of the firm which are targeted primarily at those with export potential.

Government itself does not actually create jobs. Ultimately it is people that generate ideas, establish firms, create opportunity and create jobs. The most impactful role that government plays is in providing a supportive business environment so that *all* enterprise can establish, thrive and grow.

This requires a whole of government response, with DETI as the principal governmental advocate for the enterprise sector. It requires delivery of coordinated and complementary actions to enhance innovation, productivity, cost competitiveness and to build a strong enterprise mix through investments in education and skills, RD&I and infrastructures, and through its fiscal, regulation and competition policies.

At the level of the firm, and complementary to the business environment elements, the enterprise development agencies⁷⁷ provide direct financial and advisory supports to companies, Irish and foreign, and including entrepreneurs and start-ups, micro and larger scale firms⁷⁸.

Short-term measures will also be required, focussing specifically on enhancing the employability of the unemployed and improving access to finance, particularly for SMEs.

Conclusion

Within the ESRI's macroeconomic model, actions to improve access to credit and restore competitiveness are implicit - it is assumed that the correct (but unspecified) actions will be taken. The following chapters further develop the rationale for a return to export-led growth, underpinned by the critical success factors - Productivity, Innovation, Cost Competitiveness and a Strong Enterprise Mix, and thus make the required actions explicit.

While it is not possible to assign a quantitative impact to each individual recommended action, we can be sure that their effective implementation will enhance the business environment and firm level competitiveness and ultimately improve Ireland's ability to achieve the stated vision of a sustainable, competitive enterprise base.

⁷⁷ IDA Ireland, Enterprise Ireland, County and City Enterprise Boards (CEBs), and Shannon Development operate under the auspices of DETI. In discussing firm level interventions this report refers primarily to these agencies. Other agencies including for example, Fáilte Ireland, Bord Bia, Bord Iascaigh Mhara, Údarás na Gaeltachta and the Irish Film Board also provide a range of direct supports to enterprises

⁷⁸ Based on criteria and on the basis of addressing market failure, and taking account of potential deadweight and displacement

3 Exports as the Key Driver for Sustainable Growth

The Importance of Exports

To simplify a complex subject, the economy can be viewed as a function of four interlinked factors: consumption; investment; government spending; and net exports (exports minus imports)⁷⁹.

Any one of these factors can leverage growth in the economy and stimulate some of the other three factors. However, sustainable long-term growth and an improved standard of living for all is best achieved when net exports are the key driver.

This is particularly true for Ireland as a small open economy dependent on trade. An export-led growth strategy draws heavily on the theory of comparative advantage - *trade makes everyone better off*. This involves selling domestically produced goods and services in the global market place, in order to raise national income, which is in turn used to purchase goods and services (including imports) for domestic consumption.

The other three factors cannot, on their own, lead to sustainable economic growth. For example, unless increases in government spending are funded by revenue generated through export growth, they would otherwise need to be financed either through increased taxation, impacting firms and individuals, or through international borrowing at a cost to the economy. Similarly, consumer spending cannot increase indefinitely purely on the basis of increased domestic economic growth which is constrained by Ireland's relatively small domestic market.

Exports, however, have a much greater potential for growth on the basis of value added being created through increased productivity, innovation and competitiveness.

A Return to Export-led Growth is the only sustainable route to deliver jobs and growth

It is Not Just About Exporters

Increased export growth leads to:

- Sustainable direct job opportunities above those provided by serving the domestic market;
- Growth in revenues for firms, beyond what the domestic economy can provide;
- Increased opportunities for locally trading businesses;
- Substantial ripple effect in terms of job creation across the entire economy; and
- Enhanced tax yields for government.

An export focused approach impacts on the local economy in other ways, which although not as easily quantified, are equally important. For example, because exporting firms are directly exposed to international competition, innovation and high productivity are essential ingredients for success. In turn, they demand high standards from their suppliers - which impacts positively on Irish based suppliers. In general, management capabilities in exporting

⁷⁹ Exports includes foreign earnings and captures activities such as tourism, education services to foreign students, electronic trade and outward direct investment (ODI)

firms are more in-tune with market drivers of change and leading edge practices⁸⁰, enhancing the overall skills base of Ireland's workforce.

Beyond these immediate effects, export growth can begin to turn the other wheels of the economy, and creates a virtuous circle to deliver growth and jobs:

- The boost in secondary employment and the increased consumer confidence which arises as a result of export driven growth leads to increased levels of consumer spending in the local economy⁸¹;
- This in turn further contributes to government revenues through VAT and excise;
- The higher return resulting from improved export performance allows entrepreneurs and enterprises to invest further in capital (both physical and human), ultimately, boosting productivity;
- All of this activity can allow the State to invest its enhanced resources in areas that will in turn contribute to the virtuous circle, for example key infrastructures, education and skills etc.

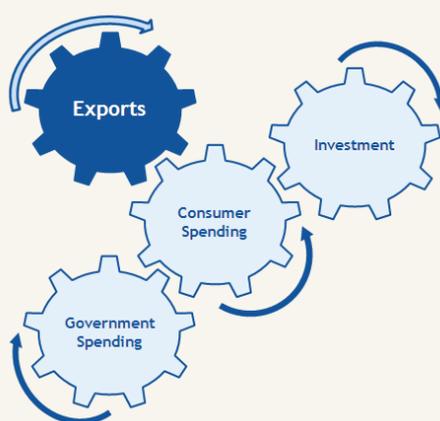
Economic benefits arising from exports*:

- Irish Economy Expenditure (IEE) which includes wages, material and services: circa €40 billion per annum
- For every 100 jobs created in internationally trading services sectors, another 99 are created in secondary services employment. Each manufacturing job is estimated to generate 74 secondary services jobs**
- Tax yield from exporting firms (agency supported clients) amounts to 78 percent of total corporation tax

*Based on Agency supported companies

** Forfás calculations, unpublished

Figure 7: Export Driven Economic Growth - The Virtuous Circle



An export-led enterprise policy is a whole of economy strategy

Export driven growth delivers sustainable economic growth through the creation of a virtuous circle which impacts positively on all of the key drivers - generating jobs and growth

⁸⁰ The findings in this report point to the need to further enhance management skills overall in the context of accelerating the growth potential of indigenous firms, enhancing productivity and embracing innovation

⁸¹ The fact that the savings rate has increased dramatically in Ireland indicates that a decrease in consumption is not entirely due to lack of resources, but rather through a perceived need to safeguard against future uncertainty. Government commitment to a planned course and a return to growth in areas of the economy (as is happening, with GDP up 2.7 percent in Q1 2010) will result in increased certainty and consumer confidence

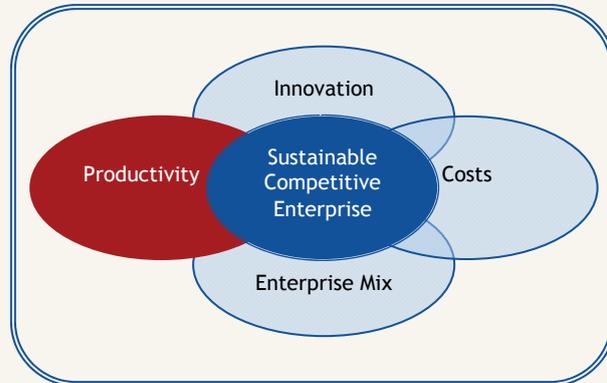
Conclusion

Promoting and sustaining an economic recovery depends on returning to an export-led growth model. It is clear that deviation from such a model over the last decade has cost Ireland dearly. The next four chapters consider the actions required to facilitate the emergence and growth of a competitive, sustainable enterprise base that will generate growth and jobs.

4 The Productivity Imperative

Introduction

In basic terms, productivity is about achieving more with the set of resources at one's disposal. For firms it means efficient production, effective utilisation of skills, equipment and technology. It also means the application of innovation across the entire business. Innovation is at the forefront of the drive towards enhanced productivity performance and competitiveness and extends beyond a focus on lowering costs and improving efficiencies. Innovation is a critical success factor in its own right and it is given exclusive focus in Chapter 5.



It is easy to make the connection between highly productive firms and a high performing economy. That is why enabling productivity growth has always been central to enterprise policy. Increasing productivity makes a real difference in a competitive environment; in straitened economic circumstances it becomes an imperative.

The key concern for enterprise policy is to create the right conditions that will enable and encourage firms to increase their productivity performance. It is true to say that while responsibility for maximising productive capability rests with firms, many of the resources they draw on emerge from the surrounding environment - an environment over which they have little control. This includes, for example, the education and skills base of the labour force, transport and communications systems, science and technology know-how, etc.

Trends in Ireland's Productivity

Irish productivity, measured in terms of GDP per hour worked, is amongst the highest in the world. Using GNP as the measure of output however, a more accurate estimate in Ireland's case, levels of productivity are substantially lower, below the OECD average in fact⁸².

Irish productivity growth rates in GNP terms were considerably below the OECD average over the 2005-2009 period, and were also significantly lower than the growth rates which had been achieved between 2001 and 2005, reflecting a deteriorating productivity performance through the decade (Figure 8 overleaf)⁸³.

Ireland's productivity growth over the past number of decades has concentrated around modern manufacturing sectors, which employ less than seven percent of the workforce. As an economy, Ireland cannot depend on similar increases in productivity in the same sectors to drive productivity growth in the future. As the costs of doing business have risen and Ireland has moved to a high wage economy, the productivity of locally trading sectors,

⁸² *Annual Competitiveness Report 2010, Volume 1: Benchmarking Ireland's Performance*, NCC, 2010

⁸³ Although an element of this may be due to an increasing contribution to the economy from services which typically are more employment intensive, there is room for improvement

including the public sector, has become increasingly important as they provide vital inputs for Ireland’s internationally trading sectors.

Figure 8: Annual Average Growth in Output per Hour Worked 2001-2009⁸⁴



Source: NCC Annual Competitiveness Report 2009; Groningen Growth and Development Centre, Total Economy Database, January 2010

Measures to Improve Ireland’s Productivity

Improving productivity growth across all sectors of the economy - private and public, locally and internationally trading, manufacturing and services, Irish and foreign owned - is central to Ireland’s economic growth and to the future success of its exporting sectors. Government can play a key role in a number of respects, by:

- Providing a stable macroeconomic environment and well-managed public finances;
- Continuing to invest in education, skills development and up-skilling to ensure an adaptable labour market;
- Adopting a broadly based innovation policy framework, including investment in RD&I, entrepreneurship and implementing a pro-innovation regulatory environment⁸⁵;
- Developing and maintaining world class transport, energy and communications infrastructures;

⁸⁴ Indices tracking changes in labour productivity over time are referred to as partial productivity indices, since they implicitly attribute all productivity gains to labour. In this standard approach to measuring productivity, both investment-driven increases in the productivity of capital and technological advances are seen as manifesting themselves in enhanced labour productivity

⁸⁵ This is the focus of Chapter 5

- Providing financial and soft supports directly to firms to help drive transformational change that will facilitate them to capture new market opportunities and result in business expansion; and
- Making productivity improvements in the sectors where it is an employer, including the provision of public services - health, education, justice, civil service.

Priority recommendations are focused on the areas of: education and skills; physical infrastructure and utilities and direct interventions to support firm level transformation.

Improving Ireland's Education and Skills Base

Education and training policy has been critical to Ireland's economic development to date and its central importance for future social and economic progress is reflected strongly in successive Government policies and strategies.

Education and training increase the skills, knowledge, capability and flexibility of the workforce. Investment in human capital improves an individual's employability, productivity and their capacity for innovation. High levels of educational attainment and the possession of skills that are in demand increases career opportunities, raises incomes, and lowers the likelihood of joblessness.

The National Skills Strategy⁸⁶ (NSS) presents a vision for Ireland in 2020 in which a well educated and highly skilled population will contribute to a competitive, innovation driven, knowledge-based, participative and inclusive economy. The NSS envisages that:

- 48 percent of the labour force should have qualifications at NFQ Levels 6 to 10⁸⁷;
- 45 percent should have qualifications at NFQ Levels 4 and 5;
- The remaining 7 percent will have qualifications at NFQ Levels 1 to 3 but should aspire to achieve skills at higher levels;
- The proportion of the population aged 20-24 with NFQ Level 4 or 5 awards should reach 94 percent, either through completion of the Leaving Certificate or through equivalent, more vocationally oriented programmes. The retention rate at Leaving Certificate should reach 90 percent by 2020;
- From a 2007 base, an additional 500,000 individuals within the workforce will be upskilled and have progressed by at least one NFQ Level. The majority of these individuals currently reside at Level 3 or below;
- The progression rate to third level education will have to increase from 55 percent to 72 percent.

...the current economic and labour market difficulties in Ireland mean that the implementation of the National Skills Strategy is even more important, not just for the economy as a whole but especially for the many individuals who are experiencing unemployment and who require new skills to get back into employment

Source: NSS Implementation Statement, DES, March 2010

In a recent statement on NSS implementation issued by the Department of Education and Skills (DES), significant progress has been reported and the priorities of the Strategy are

⁸⁶ *Tomorrow's Skills: Towards a National Skills Strategy*, Expert Group on Future Skills Needs, March 2007

⁸⁷ NFQ - National Framework of Qualifications

reaffirmed, notwithstanding the major economic upheavals in the three years since the report was first published. While significant progress has been made at the top end of the skills spectrum, the statement indicates that the most significant challenge for the period to 2020 is up-skilling those at Levels 1-3 to Levels 4 and 5. It is vital that the NSS is implemented in full through to the realisation of its targets - failure to do so would adversely affect the productivity potential of the economy, and would represent a missed opportunity to create a competitive advantage in skills vis-à-vis our competitors. The following areas are of critical importance in the context of the outstanding agenda.

Increasing Overall Educational Attainment

Average educational attainment has risen within the workforce as new more highly educated entrants begin to impact on the overall profile. It is essential that education completion rates are improved and the increase in education participation rates that has already been achieved is sustained in the years ahead to reinforce this trend. There is still considerable potential to raise the educational qualifications of the labour force at all levels. In this regard the lower skilled, and the issue of early school leavers in particular, remains a concern.

Recent data highlight the improvements that have been made in relation to attainment and retention in the second level system:

- The percentage of the population aged 20-24 with at least Upper Secondary level education increased from 86 percent in 2005 to 88 percent in 2008⁸⁸, compared to the National Skills Strategy target of 94 percent by 2020.
- Retention at Leaving Cert for the latest available cohort of entrants (2001 entrants) has also risen from 81.3 percent to 84.7 percent, compared to a 2020 target of 90 percent⁸⁹.
- The overall progression rate from second level to some form of full- or part-time higher education has also improved and now exceeds over 60 percent, based on those who have completed Leaving Certificate, or equivalent⁹⁰.

Raising Education Quality and Achievement

At primary and secondary levels, renewed emphasis on raising education quality and achievement levels is required. Although some progress has been made, more can be achieved.

The NSS has specifically highlighted the importance of generic skills, which are regarded by employers as equal to, if not more important than, technical or job-specific skills⁹¹.

The issue of mathematical ability remains a concern. In a globalised, competitive economy it is important that Ireland moves beyond being 'average' at mathematics towards the promotion of advanced levels of skills, creativity and innovation. Mathematics develops the

⁸⁸ *Quarterly National Household Survey Module on Educational Attainment*, CSO, 2008

⁸⁹ *Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs*, EGFSN, 2010

⁹⁰ *School Leavers Survey 2007*, Department of Education and Science, 2008

⁹¹ Generic skills include: basic or fundamental skills such as literacy and numeracy; people-related skills such as communication, interpersonal, team-working and customer service skills; and conceptual or thinking skills such as problem solving, innovation and creative skills. *Tomorrows Skills: Towards a National Skills Strategy*, EGFSN, 2007

fundamental skills of critical reasoning and analysis, and promotes the ability to deal with complex problems. It is an important life skill for all students, as well as an essential foundation for Science, Technology, Engineering and Mathematics (STEM) courses. It is also a fundamental skill requirement for much of the enterprise sector.

The EGFSN has made a number of recommendations as to how levels of achievement in mathematics can be improved⁹², and the Department of Education and Skills' (DES) *Project Maths* initiative marks a significant and welcome step in the improvement of performance in this area. The new curricula are currently being rolled out to students in all secondary schools.

Recommendations:

- Implement the recommendations of the Project Maths Implementation Support Group in full and in a timely manner⁹³. In particular, priority should be given to the recommendations relating to ensuring that post primary students at all levels are taught mathematics predominantly by teachers who hold qualifications in mathematics and that the necessary resources for teacher training are in place to meet this objective.

[Department of Education and Skills/ National Council for Curriculum and Assessment]

- Incentivise increased take up of higher level mathematics through the introduction of bonus points for entry to higher education for Higher Level Leaving Certificate Mathematics, to be implemented through the CAO system.

[Department of Education and Skills/ Higher Education Institutes]

Higher Education

The higher education system makes a crucial contribution to enterprise development. In order to be competitive and achieve optimal productivity, the enterprise base needs access to a supply of well educated graduates. It also needs to draw on the knowledge base and intellectual property that exists within universities and Institutes of Technology.

Implementation of the forthcoming Higher Education Strategy needs to ensure that Higher Education Institutions (HEIs) and enterprise can better interact to address changing skills demands in a more systematic and coordinated way⁹⁴. For example:

- Industry needs to have greater involvement in the development and revision of course curricula to ensure that graduates have the skills required upon entering the labour market. Some successful examples of industry-academia interaction are already occurring and should be used as models to further expand such cooperation.
- Courses that provide structured graduate placements and internships have been highlighted by employers as extremely valuable in helping graduates transit to the labour market and should be expanded across disciplines. The expansion of work placements requires collaboration between the HEIs and industry.

⁹² *Raising National Mathematical Achievement*, EGFSN, 2008

⁹³ *Report of the Project Maths Implementation Support Group*, Department of Education and Skills, 2010

⁹⁴ *National Strategy for Higher Education: Forfás Submission*, Forfás, 2009

- Enterprises have also identified a need to place greater emphasis within taught courses on stimulating creativity and innovation in students. Key practices that should be promoted in this regard include widespread use of cross-disciplinary work, more project work and increased use of problem-based learning and inquiry-based learning approaches.
- Addressing the skills needs of those in the labour market through more flexible provision should be a core goal of the higher education system - for example, modularisation, distance learning and programmes for continuing professional development.
- There needs to be a greater connection between research and teaching. Those engaged in world class research should pass on their knowledge and experience through teaching in order to enhance the development of human capital.

Recommendation:

Ensure that, through its strategy implementation, Higher Education incorporates enterprise and innovation alongside its education and research missions.

In particular, the further development of structured and accredited work programmes as an integral part of undergraduate and postgraduate programmes within the third level sector is needed to ensure that graduates are better equipped with appropriate skills for employment.

[Department of Education and Skills]

Prioritising Infrastructure Investment to Support Enterprise

Ireland has invested heavily in physical infrastructure over the last fifteen years. It is money well spent; the level and quality of infrastructure generally can have a major influence on firm performance. While infrastructure alone is not enough to confer competitive advantage, infrastructure deficits can seriously erode productivity and ultimately, competitiveness⁹⁵.

Much has been achieved in bringing Ireland's infrastructure up to a standard comparable with most of its competitors. There have been very significant 'game-changers' - for example, the Global Crossing transatlantic telecommunications link in 2000; the upgrade of the five major inter-urban routes to motorway standard, which by the end of 2010 will have more than doubled the length of motorway in Ireland in the space of three years; the modernisation of the rail fleet; and the sustained investment in Ireland's electricity transmission and distribution networks since 2000. Much remains to be done however.

Ireland needs to continue to invest in infrastructure to address remaining deficits and maintain and grow productive capacity. Infrastructural programmes and capital investment levels should be maintained in so far as possible and should not suffer disproportionate cuts in order to maintain current expenditure levels. In addition, it is vital that the infrastructure projects likely to have greatest impact in terms of attracting overseas

⁹⁵ *Statement on Infrastructure: Issues and policy priorities for enterprise development*, Forfás, 2009

investment, supporting firms in Ireland to compete successfully in global markets and strengthening trade linkages are front-loaded. Priority should be given to the following:

- **Next Generation Networks:** A pervasive broadband network is critical to connect businesses and homes, and to future-proof the evolving requirements of enterprise and to support growth and employment. Many countries have long recognised that fibre broadband networks are critical to the development of a competitive digital economy and have committed to strong public intervention - including direct investment in some cases - to achieve this.

World class next generation networks and services are essential to enable Ireland to support the Smart Economy. In particular, access to universal high speed, symmetrical, low latency connectivity is required to enable exporting firms to exploit future growth opportunities. The actions taken to date and the investments being made currently are necessary but are not sufficient to achieve a leadership position. Estimates of the additional investment required to deliver the essential NGN access network to ensure Ireland's leadership position range from €1.8 billion to €2.5 billion. Unless a way to stimulate additional private investment is identified⁹⁶, or the State optimises its own infrastructures and investments, or does so in partnership with the private sector, Ireland risks allowing a competitiveness threat for firms based here to open up as significantly faster speeds become widespread in other countries.

- **Public Transport:** Sustained investment is required in public transport projects which offer the highest economic and social returns. The emphasis should be to improve public transport in Ireland's main cities, including integrated transport networks, particularly in Dublin.
- **International Access:** The importance of external access to Ireland cannot be overstated. It is vital to international trade in all sectors, most critically for the tourism sector. The further expansion of international passenger and freight air links must remain a priority for Government, as well as the development of deep-sea port infrastructure⁹⁷.
- **Roads:** Priority projects are:
 - Finalising the Atlantic Road Corridor (particularly the Cork to Galway section);
 - Upgrading the remaining sections of the N11 (Dublin to Rosslare); and
 - Relieving bottlenecks in Galway city (N6 Galway City Outer Bypass) and Cork city (N22 Cork Northern Ring Road/N28 Ringaskiddy/Cork)⁹⁸.
- **Energy:** Continued investment is required in energy infrastructure, particularly the east-west interconnector, the second north-south tie-line and the planned electricity grid upgrade to support renewable technologies.
- **Accelerated development of the Gateways:** The National Spatial Strategy underlines the importance of building critical mass in Ireland's key population centres. Given the central role that Dublin and Ireland's other cities play in driving national and regional

⁹⁶ In Next Generation Broadband Networks, and particularly in terms of access networks

⁹⁷ The forthcoming Government strategy on *Trade, Tourism and Investment* highlights the need to expand links to key global hubs and in particular, the high growth and emerging markets of India and China

⁹⁸ A strategic review of the national roads programme is committed to within the Programme for Government. *Renewed Programme for Government*, Department of the Taoiseach, October 2009

competitiveness, any re-prioritisation of capital expenditure should focus resources on their development and the enhancement of physical connections between them⁹⁹.

Alongside these specific infrastructure requirements, Government can achieve the delivery of priority infrastructure projects more efficiently especially in the context of reduced resources. The rollout of different infrastructures such as roads, broadband, water, electricity and gas can be done in a more coordinated and joined-up manner. This has the potential to deliver significant cost savings particularly where projects are undertaken simultaneously¹⁰⁰. A strengthening of existing institutional arrangements to enable the increased sharing of investment rollout plans across Government departments and agencies is required¹⁰¹.

Recommendation: Next Generation Broadband:

- Ensure the policy environment and regulatory regime facilitate availability of and access to competitively priced, next generation broadband network (NGN) infrastructures and services to enhance productivity, stimulate and enhance innovation, and support future growth and employment. This is essential for future growth as pervasive next generation broadband access networks are critical to connect businesses and homes, and to future-proof for the evolving needs of enterprise.

Estimates of the investment required to deliver the essential NGN access network to ensure Ireland's leadership position range from €1.8 billion to €2.5 billion.

[Department of Communications, Energy and Natural Resources]

Recommendations: Other Infrastructure Priorities:

- Maintain infrastructural capital investment programmes, in particular in roads, public transport and energy, prioritised in line with the needs of enterprise and international trade.

Any reprioritisation of infrastructural spending and capital investment should align with the need to target investment at building critical mass and the competitive position of the Gateways so that they can attract and support enterprise development.

[Department of Transport/Department of Communications, Energy and Natural Resources]

- Coordinate design and delivery of infrastructure projects to achieve efficiency gains and optimal integration and impact of infrastructure networks.

[Department of Transport/Department of Communications, Energy and Natural Resources]

⁹⁹ *Regional Competitiveness Agendas: Overview, Findings & Actions*, Forfás, 2009. The restoration of the Gateways Innovation Fund as outlined in the *Infrastructure Investment Priorities 2010-2016 - A Financial Framework*, Department of Finance, July 2010, is a welcome development

¹⁰⁰ For example, civil works account for 80 percent of the cost of rolling out fibre for advanced broadband services. *Explanatory Note on Regulated Access to Next Generation Access Networks*, European Commission, 2008

¹⁰¹ The forthcoming 2010 *Planning (Amendment) Act* provisions should facilitate greater consistency between national, regional and local level development targets

Firm Level Interventions - Supporting Business Transformation

The pace of change and increased competition globally means that all firms must continually enhance business performance. Encouraging companies to engage in productivity-enhancing company transformation is necessary to maintain jobs and to stimulate further investment in Ireland. Increases in productivity are best realised in a work environment that is flexible, and in which the creativity, knowledge, skills and experience of the workforce are channelled and rewarded. The enablers and drivers of workplace productivity include¹⁰²:

- Investment in ICT and associated training and organisational change;
- Investment in equipment (e.g. more efficient equipment and technologies that facilitate automation);
- Increasing natural resource efficiency (e.g. energy, water, packaging) and reducing waste¹⁰³;
- Harnessing people power by providing job-related training and variable pay schemes, such as gain sharing, as well as goal setting and feedback for employees; and
- Using benchmarking and world class business processes - for example Lean, Six Sigma.

Enterprise Agency Interventions:

Enterprise Ireland has introduced a *Lean Business* offer which aims to encourage clients to adopt and embed lean business principles in their organisation.

IDA Ireland is actively driving the transformation agenda and providing supports targeted towards enhancing capability and technology, as well as optimising resources and energy efficiency within firms.

CEBs through the *Tech Check* programme have assisted numerous micro companies through awareness building about the benefits of ICT and adoption of new technology.

Forfás has published a practical guide to increasing productivity at firm level. The guide - *Boost Your Company's Productivity - Simple Steps* - highlights some proven tactics for boosting productivity within the firm.

This is a broad agenda and for many firms requires a strategic step-change towards comprehensive company transformation. The impact of productivity enhancing initiatives within the firm can be realised over a relatively short time frame and are usually measurable. Positive impacts contribute directly to overall firm performance through enhanced competitiveness in international markets, increased profitability and business expansion.

The enterprise development agencies have been active in a number of areas, particularly where firms aim to increase management and organisational capability and are making strategic capital investments to enhance productivity and energy efficiency¹⁰⁴. It is essential that this activity continues and is expanded.

¹⁰² *Boost your Company's Productivity: A Guide for Managers and Employees*, Forfás, 2009

¹⁰³ See Chapter 6 - Cost Competitiveness - for further discussion

¹⁰⁴ Fáilte Ireland also provides a range of programmes to assist tourism enterprises to improve efficiencies, enhance skills, maximise e-business presence and grow markets

Lean and Six Sigma¹⁰⁵

Enterprise Ireland has successfully piloted a ‘Lean Business Offer’ during 2009 which resulted in significant productivity improvements amongst the participating companies. The Lean Offer is now a core element of Enterprise Ireland’s support for firm level company transformation initiatives and is being rolled out to a wider base of client companies.

An expansion of supports for the deployment of Lean and Six Sigma methodologies amongst Irish based firms is now required, building on the success of Enterprise Ireland’s existing model and proactively encouraging take-up amongst services firms in particular.

Recommendation:

Expand supports for Lean, Six Sigma and transformational change programmes to support Irish based enterprises to enhance productivity, thereby accelerating growth, extending mandates and/or enabling achievement of scale.

[Department of Enterprise, Trade and Innovation/ Enterprise Ireland/ IDA Ireland]

Improving the Skills of People in Employment

Engagement in continuing learning will dictate the future productivity of those currently employed in the workforce; it will also determine the ability of individuals to access new jobs in the future as firms undergo transformation and re-invention to remain competitive¹⁰⁶. Research shows that there are positive returns both for the individual and the firm from investment in in-employment training¹⁰⁷.

SMEs face substantial obstacles in the provision of training to employees: the costs of formal training are relatively high as a percentage of payroll; small businesses find it difficult to release workers for training without disrupting performance; and, when trained, some workers may leave the company to seek higher-paying jobs elsewhere. Intervention to assist SMEs in overcoming these obstacles is needed.

Currently, State supports for up-skilling programmes for those in employment are mainly delivered through Skillnets, with additional direct firm level interventions through IDA Ireland and Enterprise Ireland in the context of substantive company transformation initiatives¹⁰⁸. Reflecting the emphasis within the National Skills Strategy and subsequent commentary by the EGFSN and the National Competitiveness Council (NCC), a key focus is required in the following areas:

¹⁰⁵ *Lean and Six Sigma* are business improvement management systems that employ a set of tools and techniques typically applied organisation-wide within manufacturing and (increasingly) services firms to enhance quality and minimise defects in products and processes, maximise resource efficiency and consistently deliver improved business performance

¹⁰⁶ *Tomorrow’s Skills: Towards a National Skills Strategy*, EGFSN, 2007

¹⁰⁷ *Ibid.*

¹⁰⁸ In addition to its expenditure on training for the unemployed, FÁS currently spends approximately €76 million, primarily on the apprenticeship programme, as well as the outstanding allocations on existing contracts under the competency development programme. No additional funds were provided or reallocated for in-employment training in 2010

- Retention of funding for training those in employment, particularly within SMEs and for employees with low skills in low productivity or vulnerable sectors - the significant reduction in the funding for in-employment training in 2010 is a concern;
- Matching training with enterprise skills needs and deficits is critical. Limited resources should focus on the provision of demand-led courses to support employer and employee identified specific skills needs in line with national objectives.

Recommendation:

Allocate State funding, with matching funds from the private sector where specified, for **in-employment training**, to meet identified training needs as per EGFSN reports and to equip individuals so that they can take advantage of opportunities as they arise. Particular emphasis should be accorded to the low-skilled and those in vulnerable employments.

[Department of Education and Skills/ Department of Enterprise, Trade and Innovation]

Effective Management - Leading Transformational Change

Research shows that there is a strong relationship between management practice and business performance. Improved management practice is associated with large increases in productivity, sales growth and return on capital employed¹⁰⁹. Improvements in management capabilities amongst SMEs can also lead to an increasing number of start-up companies progressing through the various stages of scaling.

Improvements in Irish management practices could potentially generate significant benefits for the Irish economy. To demonstrate - McKinsey and Co. estimated that bringing the lowest rated two quartiles of firms in the Republic of Ireland up to the average level could be worth between €500m-€2.5bn in terms of increased Gross Value Added (GVA) in the manufacturing sector alone¹¹⁰.

There is a positive relationship between management development and the bottom line performance of a firm - OECD

Participation in management development in Ireland is sub-optimal as a result of a number of factors, including:

- A lack of appreciation for the need for and benefits of management development, particularly amongst non-engaged SMEs;
- A perceived lack of relevance of programmes to the needs of micro and small firms;
- Confusion amongst potential customers over the range and quality of the courses on offer, as well as a lack of certainty over the content of the various courses and the competencies which participants would acquire;
- Limited regional access to relevant management development courses; and
- Financial and time constraints.

¹⁰⁹ *Management Matters in Northern Ireland and the Republic of Ireland*, McKinsey & Co. and Forfás, 2009

¹¹⁰ *Ibid.*

The report of the Management Development Council (MDC)¹¹¹ envisages a greater proportion of SMEs engaging in longer term, transformational, productivity-enhancing courses in order to affect a major positive step-change in firm level performance. The MDC made recommendations to progress a national system for management development, incorporating reform of supply, demand, and funding. One of the key recommendations called for the provision of funding through the National Training Fund, starting at €10-€12 million per annum to fund management development networks. In September 2010 the Minister for Enterprise, Trade and Innovation announced the establishment of a pilot management training fund for SMEs with an initial investment of €1.4 million and this is a welcome first step.

The importance of management and leadership capabilities in advancing firm performance in the context of growing exports and market expansion, amongst indigenous firms in particular, is further discussed in Chapter 7 and supported by specific recommendations.

Recommendation:

Building on the current support for SME management development, allocate further funding for SME management development networks, as recommended by the Management Development Council.

[Department of Enterprise, Trade and Innovation/ Department of Education and Skills]

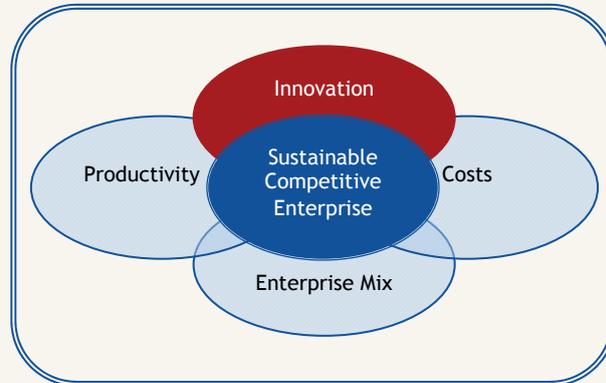
¹¹¹ *Management Development in Ireland*, Management Development Council, 2010, published by Forfás

5 An Innovation Driven Economy

Introduction

Innovation is a broad concept that is relevant to all aspects of a business. Innovation enables firms to differentiate their product and services offerings, to develop new ways to reach customers and markets, and to improve business and operational processes and organisational structures.

Innovation plays a critical role in creating competitive advantage, enhancing productivity, and ultimately, increasing profitability. It is increasingly crucial for all firms, whether trading in local or international markets, whether large or small and regardless of the sector in which they operate. Sources of innovation range from the R&D laboratory, to customers, suppliers, partners, individuals and/or HEIs.



The centrality of innovation to economic growth is undisputed nowadays. Increasingly, governments around the world are seeking ways to maximise innovative capacity and performance within their economies. Alongside the immediate and pressing challenges there is also a growing recognition of the role of innovation in meeting the longer term global and so-called ‘grand’ challenges, which include climate change, food security, energy security and demographic ageing¹¹².

‘Innovation is essential if countries and firms are to recover from the economic downturn and thrive in today’s highly competitive and connected global economy’

Source: OECD Innovation Strategy, 2010

A primary objective in the Government’s *Building Ireland’s Smart Economy* is to make Ireland an ‘innovation and commercialisation hub of Europe’¹¹³. Substantial progress has already been made through ongoing implementation of the *Strategy for Science, Technology and Innovation 2007-2013* (SSTI), which has seen unprecedented investment in Ireland’s research base and the commercialisation of ideas from research activity in Ireland¹¹⁴. The more recent *Report of the Innovation Task Force* emphasises the critical role of innovation in achieving productivity growth with recommendations focused on human capital development and commercialisation¹¹⁵.

¹¹² *Europe 2020*, European Commission, 2010; *Interim Report on the OECD Innovation Strategy*, OECD, 2009; *Sharing our Future: Ireland 2025 - Strategic Policy Requirements for Enterprise Development*, Forfás, 2009

¹¹³ *Building Ireland’s Smart Economy*, Department of the Taoiseach, 2008

¹¹⁴ An overview is provided in *Delivering the Smart Economy - Science Technology & Innovation*, DETE, 2009

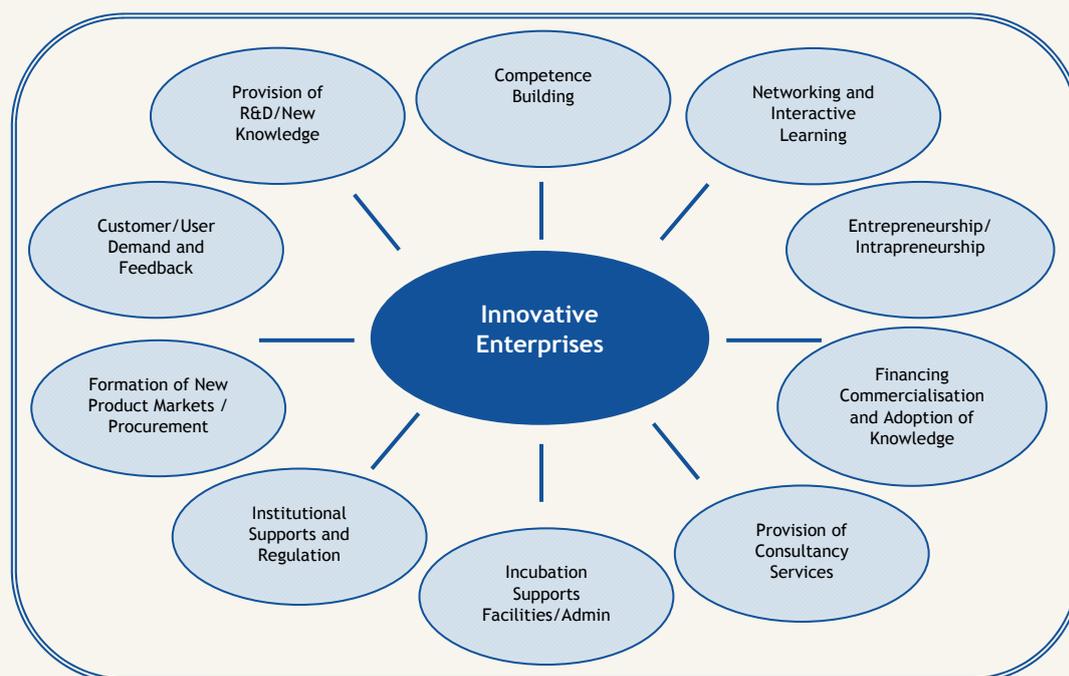
¹¹⁵ *Innovation Ireland: Report of the Innovation Taskforce*, Innovation Taskforce, 2010

The Innovation System

To some extent understanding about innovation is only catching up with the reality of what has always been a complex process and which for a long time was considered in too simplistic a way. The concept of innovation has broadened: the simple linear innovation model, where the entire innovation process follows a defined and one-directional causal chain from basic research through to development and ultimately new marketable products and services, has given way to a now widely accepted but more complex 'systems' approach. This has had a transformative effect in terms of how innovation is currently being approached from a policy perspective.

Innovations emerge from an interactive and dynamic environment - a 'system' that may involve a range of actors/players. This includes other firms, suppliers, competitors, universities, research institutes, investment banks, public agencies, and individual customers; as well as the institutions, laws, regulations, cultural norms, social rules and technical standards, that influence (either through constraining or incentivising) the actions of these players (Figure 9)¹¹⁶. The system includes both demand- and user-driven determinants as well as actors/activities that 'supply' innovation.

Figure 9: Key Activities in Systems of Innovation



Source: Illustration is based on Edquist, 2005

¹¹⁶ 'Systems of Innovation: Perspectives and Challenges', Edquist, C., (in Fagerberg et al eds.) The Oxford Handbook of Innovation, 2005

The success of an innovation system is reflected in the degree to which individuals, entrepreneurs and firms, through their interaction with the various elements within the system, can innovate or effectively exploit innovations from elsewhere. Making innovation happen at the level of the firm is a necessary challenge in improving firm performance; it is also the case that many firms may not know how to go about it.

Innovation at the Firm Level

A firm can be innovative in a number of respects. As an established firm or new start-up, it may introduce a new or significantly improved product or service; implement a new or improved production or delivery method; implement a new approach to marketing; or it may undertake strategic organisational changes to optimise resources, including knowledge and personnel¹¹⁷. Increasingly, firms need to be proactive in all of these areas to compete successfully.

The concept of an innovation system highlights the fact that firms do not (and indeed should not seek to) innovate in isolation. If an enterprise is to be truly innovative it must interact productively and strategically with its surrounding environment. To do this effectively, however, requires the development of certain capabilities within the firm. Chief amongst these are: strategic ability; access to technological know-how; links and partnerships; industry foresight and consumer/customer insight; organisational learning; and an organisational innovative culture, which includes creativity and entrepreneurial thinking¹¹⁸. Implicit across all of these firm competencies is strong management capability within the firm.

Some indicators from the CSO/Forfás *Community Innovation Survey 2006-2008*, provide insights into Ireland's firm level innovation performance:

- The overall level of innovative activity within Irish firms at almost 45 percent compares relatively well within an EU 27 context. Ireland ranks 7th overall in terms of innovation activity (rates are highest for Germany - 63 percent, Belgium - 52 percent and Finland - 51 percent). Despite the relatively strong ranking, more than half of all firms in Ireland are not innovation active;
- Enterprises involved in innovative activity have an average GVA per person of over €164,000 compared to €89,000 for non-innovative enterprises¹¹⁹;
- Innovative enterprises are more likely to be engaged in exporting (66 percent) when compared to non-innovative enterprises (33 percent)¹²⁰;
- The principal barriers to innovation for Irish firms (whether engaged in innovative activity or not) are lack of funds, high costs involved, and markets dominated by established enterprises;

¹¹⁷ *Oslo Manual*, OECD & Eurostat, 2005

¹¹⁸ There are varied descriptions of what is required at firm level for successful innovation, the areas identified here draw on the work of Prof. John Bessant, Imperial College London cited in *Enterprise Ireland*, 2004; Palmer & Kaplan, 2007; and Wissema, 2009

¹¹⁹ Based on latest available data, 2006

¹²⁰ Based on latest available data, 2006

- Innovation activity is far more likely to take place in larger companies. Activity amongst smaller firms in Ireland is relatively low at 40 percent; the corresponding figure for medium and large companies is 61 percent and 76 percent respectively¹²¹; and
- Almost a quarter of all enterprises involved in innovative activity in Ireland engaged with other enterprises and institutions for this activity. Ireland ranks 19th out of the EU 27 in terms of prevalence of innovation co-operation.

Overall, the data suggests that there is room for improvement. The relatively lower innovation rate amongst small firms is of concern and suggests a need for policy focus in this area. The main barriers to innovation concern availability of funds and market uncertainty.

Making Innovation Happen - Policy Considerations

Policy interventions need to be broadly based, reflecting the increased complexity associated with the multiple and interrelated sources, nature and determinants of innovation¹²². In this regard, there is a need for policy to recognise and accommodate:

- Demand- as well as supply-side drivers of innovation: policy interventions have tended to weigh behind ‘supply-side’ aspects of innovation (e.g. building the science and technology base, creating ‘innovators’ and fostering innovative capacity within firms) while apparently taking for granted the role that market demand, or the ‘pull factor’, plays in stimulating and driving innovation¹²³;
- Technological as well as non-technological innovations: applicable to both products and processes including organisational - and relevant across both manufacturing and services activities;

Services Innovation - Unique Characteristics

- Driven more by users and tacit knowledge than by formal R&D activity or collaboration with universities
- More outward looking and open in character - less likely to be carried out ‘off-line’
- Utilise formal IP rights less intensively than goods innovators and rely more on confidentiality agreements, lead time, trademarks and secrecy rather than patents
- Organisational changes are particularly influential in innovation in services - e.g. designing new revenues or business models

Leiponen, 2008; Miles, 2005

¹²¹ Ireland ranked 7th overall amongst the EU 27 in terms of the rate of small firm engagement in innovation activities in 2006 and above the average of 34.4 percent. Data for 2008 is as yet unavailable for all EU 27 states, however 2008 data shows that Ireland’s level of small firm engagement in innovation activities has dropped from 42.7 percent to 40.1 percent and lies behind rates in Germany (57.3 percent), Belgium (48.6 percent) and Finland (46.9 percent)

¹²² *Broad based Innovation Policy*, Edquist et al, 2009; *Creating Innovation*, NESTA, 2008; and *OECD Innovation Strategy*, OECD, 2010

¹²³ Many countries are incorporating ‘demand’ side instruments - especially those focused around public procurement, regulation and competition - into their innovation policy frameworks. The European Commission is progressing a pilot Lead Market Initiative. *Demand based Innovation Policy*, Edler J., 2007; and *Demand Policies for Innovation in EU CEE Countries*, Edler, J., 2009a

- The distinct characteristics of innovation in services that set it apart from innovation in manufacturing¹²⁴;
- The increasing importance of services innovations (both technological and non-technological) across all sectors of activity¹²⁵;
- The emergence of new forms of knowledge sharing and exchange between firms, individuals (including customers and users) and institutions as the practice of ‘open innovation’ spreads and networks and ecosystems become increasingly global; and
- The continuing importance of local knowledge and proximity to innovation processes despite increased globalisation¹²⁶.

The implications of the above are considerable from a policy development perspective - requiring not only the adoption of broader based policy approaches but also involving a range of government departments that will need to work in a more integrated manner.

Building a Supportive Environment for Innovation

Although it may be said that Ireland’s innovation policy framework owes much to the linear model, it is evolving rapidly and now constitutes a broad policy footprint where the SSTI’s core focus on investing in science and technology research and development is accompanied by a variety of measures ranging from entrepreneurship and commercialisation supports, to building networks and collaboration, as well as competence building through National Skills Strategy implementation. Table 5 overleaf outlines a range of interventions currently in place that support innovation in the Irish context (it is not intended to be exhaustive).

The report of the Innovation Taskforce also reflects a broader perspective on innovation and describes a multifaceted innovation landscape encompassing education, the labour market, financial markets and the markets for knowledge.

The action areas detailed in this chapter both reflect and build on the work of the Taskforce and take account of the policy considerations outlined above.

¹²⁴ *Innovation in Services*, NESTA Policy Briefing Paper IIS/23, 2008; *Statement for European Innovation Action Plan*, EPISIS, 2010; *Innovation in Ireland*, DETE, 2008; and *Is Services Innovation Different?*, Leiponen, A., 2008

¹²⁵ NESTA highlights the role that services innovation can play in closing the UK’s productivity gap with other leading nations - not only in terms of the services sector but also in other sectors of the economy. *Innovation in Services*, NESTA Policy Briefing Paper IIS/23, 2008

¹²⁶ *OECD Innovation Strategy*, OECD, 2010

Table 5: Supporting Innovative Activity in Ireland - Selected Policy Interventions¹²⁷

Provision of new knowledge	Strategy for Science, Technology and Innovation (SSTI) - an integrated framework and funding for world class R&D capacity in the economy, EU Framework Programmes
Competence building	Tomorrow's Skills - Towards a National Skills Strategy (2007) - meeting increased demand for qualifications and technical skills, generic and transferable skills for knowledge-intensive occupations; Project Maths
Fostering Entrepreneurship	EnterpriseSTART stimulating entrepreneurship activity; supports for High Potential Start-Ups (HPSUs); Technology Transfer Offices (TTOs) within HEIs; Business Partners Programme
Networking/Interactive learning	Strategic Research Clusters (SRCs), Applied Research Enhancement and Industry Led Research programmes, Competence Centres, and ITI All-Island Business Networks.
Institutional Supports and Regulation	R&D tax credit increased to 25 percent; new business start-ups 3 year tax exemption; tax relief on intangible assets; national codes of practice for IP management/transfer; Better Regulation initiative, BES
Incubation facilities and administrative support	Enterprise Ireland Campus Incubation programme; Technology Transfer Offices; Community Enterprise Centres Scheme
Financing of innovation processes/ commercialisation	R&D Fund; Innovation Partnerships; Innovation Vouchers; Commercialisation Fund; CSETs; SRCs; Competence Centres
Provision of consultancy services (management advice, tech transfer, legal advice etc.)	Leadership 4 Growth, International Selling programmes; TTO services; Local advisory services through the CEB network, BICs etc
Formation of new product markets	Indirectly through initiatives in support of renewable energy and energy conservation, for example: e-cars initiative
Articulation of quality requirements with regard to new products	Recommendations of the Procurement Innovation Group

Investment in R&D: A Key Driver

Research and development results in new knowledge, new products/services and new processes and therefore is a major driver of technical change, productivity growth and overall economic progress¹²⁸. There is a strong rationale for State investment in R&D - especially fundamental or basic research. The private sector will tend to under-invest since the benefits of this research do not always accrue to the original investor (it essentially becomes a public good, especially with regard to the development of human capital).

¹²⁷ The 'innovation activity map' illustrated earlier (Figure 9) is used as the frame of reference

¹²⁸ *The Role of PhDs in the Smart Economy*, Advisory Council for Science, Technology and Innovation, 2009. The report cites extensive literature on this topic

Outputs from the public research base in Ireland: some key metrics

- Publications from SFI funded researchers have grown from 1,252 in 2005 to 1,730 in 2007, placing Ireland above the EU average
- By the end of 2008, SFI was supporting 322 Principal Investigator (PI) led research teams, a large share of which have been attracted from overseas
- In 2008, Ireland entered the top 20 list for citations in all fields for the first time
- Half of all research personnel employed in the enterprise sector since 2001 were PhD qualified researchers
- The SSTI objective to double the output of PhDs by 2013 over the 2005 base has advanced significantly and is ahead of target with an actual figure of 1,091 PhD graduates in 2008 (compared with the projected 1,009 in the SSTI)

Source: *Sustaining Investment in R&D, ACSTI, 2009*; *Higher Education: Key Facts & Figures 08/09, HEA, 2009*

In times of economic crisis, the rationale becomes even stronger. As banks, markets and investors become more risk averse, firms find it increasingly difficult to secure external sources of funding to support their investments in research, development and innovation (RD&I). In this scenario business RD&I is channelled towards short-term, low-risk innovations while the longer term high-risk but potentially transformative innovation projects are cut back, undermining longer term sustainability¹²⁹. Having said that, some research-intensive firms will grasp the opportunity to secure market leadership in a time of crisis, increasing their spend on R&D and innovation and maximising competitive advantage¹³⁰.

Under its Smart Economy policy framework, the Government has renewed its commitment to implementing the SSTI and has set a target of achieving an overall investment in R&D (public and private combined) of 3 percent of GDP (also recommended by the Innovation Taskforce)¹³¹.

As of 2008, Ireland's total R&D investment (public and private combined) amounted to 1.68 percent of GNP¹³². While investment remains below the EU 27 average of 1.77 percent, the current level of expenditure in Ireland reflects rapid convergence with the EU since 2000, when the differential between Ireland and the EU was 1.32 percent and 1.74 percent of GNP respectively.

Ireland has made substantial progress, although there is still a considerable way to go before the 3 percent target can be realised. It is vital that HEIs are enabled to continue to develop capability in world class research and become exemplars in applied research activity in collaboration with enterprise. It is also an imperative that Ireland continues to foster in-firm RD&I, through direct support at the firm level. Continued investment aligned with increased

¹²⁹ *Policy Responses to the Economic Crisis*, OECD, 2009

¹³⁰ Some of the world's leading technology firms such as Samsung Electronics and Google were seen to strongly increase their R&D expenditure during and after the 'new economy bust' of 2001, *Ibid*.

¹³¹ *Renewed Programme for Government*, Department of the Taoiseach, October 2009. This overarching objective is in line with the target for member states set out in *Europe 2020: A European Strategy for smart, sustainable and inclusive growth*, European Commission, 2010. The 3 percent of GDP target and approach to achieving it are under discussion at EU level

¹³² *R&D Statistics in Ireland at a Glance*, Forfás, 2009. GNP is the preferred denominator when considering the level of investment in R&D within the Irish economy since it excludes much of the repatriated profits accruing to foreign multinationals in Ireland that artificially inflates GDP figures

focus on commercialisation is essential to the achievement of the vision outlined in this report.

The current pressure on exchequer resources has already meant that public investment has fallen behind the original projections laid out under the SSTI. This has had significant negative impacts over the past year, for example through depletion of research teams and principal investigators funded through SFI programmes. However, the publication in July 2010 of the Government's revised capital framework has restored a level of certainty with regard to Ireland's commitment to further strengthening its STI base¹³³. The investment envisaged over the period to 2016, while still behind previous SSTI projections, represents a very significant focus on the STI agenda in the context of economic renewal and will facilitate recovery of lost ground, particularly with regard to SFI capacity. The increasing annual allocation for STI programmes at least until 2014 also represents a strong signal of intent from Ireland in an international context.

Alongside this renewed commitment, the Interdepartmental Committee on STI has put in train two initiatives (through Forfás) to ensure that the return on investment and value for money is optimised:

- A detailed assessment of the economic impact of State investment in R&D; and
- A prioritisation exercise which will inform the priority areas and future focus of publicly funded science, technology and innovation (STI), taking into consideration Ireland's sectoral and research strengths and emerging opportunities.

Positive enterprise impacts of public investment in R&D in Ireland:

- Business expenditure on R&D (BERD) has been increasing in recent years, in tandem with increased public investment in higher education (HERD).
- The number of firms performing significant R&D (>€2 million per annum) rose to 164 in 2007 compared to 118 in 2005*.
- Almost 50 percent of IDA Ireland investments in 2009 (totalling €500 million) were RD&I related and represented an increase in the level of RD&I investments by IDA Ireland supported companies of 26 percent over 2007 levels.
- A very positive aspect of Ireland's R&D performance over the past number of years has been the ability of State investment to leverage further private investment by the business sector. One of the targets of the Lisbon Strategy is that the business enterprise sector should account for two-thirds of total R&D investment**. Unlike many EU member states, Ireland has maintained this balance of public and private investment for some years now.

* CSO, *Business Expenditure on R&D, 2007/2008*.

** *Sustaining Investment in research and Development, Advisory Council for Science, Technology and Innovation, 2009*

¹³³ *Infrastructure Investment Priorities 2010-2016 - A Financial Framework*, Department of Finance, 2010

Recommendations:

- Provide continued certainty to the enterprise and academic community that Ireland will maintain its focus on delivering a world class research base as envisioned in the *Strategy for Science, Technology and Innovation (SSTI)*.

In particular, planned public investment in STI as set out in the Government's Capital Programme 2010-2016 should be:

- Prioritised to meet the needs of current and future enterprise (including SMEs); and
- Maintained in the future with the objective of meeting the 3 percent of GDP set out in the Renewed Programme for Government.

[Department of Enterprise, Trade and Innovation]

- Take action, as recommended by the Advisory Council for Science, Technology and Innovation, and others, to continuously enhance the environment for business research and development in Ireland and to further strengthen the interaction between the business and academic sectors, including:
 - In the context of priority setting, focus on centres of excellence with critical mass so that the full spectrum of research can be supported and to ensure that the interfaces between basic and applied research and the translation of research into innovation are working smoothly. In this regard, continue to enhance the industry-led competence centre model.

[Department of Enterprise, Trade and Innovation]

Skills for Innovation - Innovative People

Innovation is fundamentally reliant on the knowledge and capabilities of people. In Ireland, the strong emphasis on human capital development has played a crucial role in its economic progress to date and a continued focus is vital for future growth. A central objective must be to empower people to innovate. This should take into account a range of skills and competencies that extend beyond and complement formal education and that are acquired on a life-long basis¹³⁴. This includes:

- Developing scientific and technological talent at all levels of the education system¹³⁵;
- Developing generic and transferable skills and attitudes in the context of work settings requiring flexibility, continuous learning, team-working, problem solving and creativity¹³⁶;
- Complementing STEM (science, technology, engineering, mathematics) disciplines with the arts, humanities and the social sciences (AHSS) and increasing the synergies between the disciplines¹³⁷;
- Developing management capabilities, particularly within SMEs¹³⁸; and

¹³⁴ *OECD Innovation Strategy*, OECD, 2010

¹³⁵ Investment in Ireland's research and development base through the SSTI and the activities of *Discover Science & Engineering* and of the enterprise development agencies, particularly Science Foundation Ireland (SFI), plays a key role in human capital development

¹³⁶ *Tomorrow's Skills - Towards a National Skills Strategy*, EGFSN, 2007. And reiterated in the *Innovation Ireland: Report of the Innovation Task Force*, Innovation Taskforce, 2010

¹³⁷ *Innovation Ireland: Report of the Innovation Task Force*, Innovation Taskforce, 2010

¹³⁸ *Management Development in Ireland*, Management Development Council, 2009

- Building firm level inter-related capabilities in R&D, innovation and market and customer knowledge¹³⁹.

The National Skills Strategy (NSS) and more recently, the Innovation Taskforce (as well as feedback from enterprise) have underlined the fundamental importance of building generic skills to complement the more formal and domain-specific competencies. These skills, which include critical thinking, creativity, communication and teamwork are essential to enhancing innovative capacity and should be part of learning systems from early on. There is a need to build on the progress that has been made in terms of curricula reform, learning processes and assessment mechanisms that will ensure that individuals develop the appropriate skills and competencies required for the continually evolving workplace.

'Innovation cannot be organised by decree. It comes from people, and only people - scientists, researchers, entrepreneurs and their employees, investors, consumers and public authorities - will make Europe more innovative.'

'But they do not act in a vacuum. They act with a mind-set and in a framework which either discourages or incites them to enter unknown territories'

Source: Reviewing Community Innovation Policy in a Changing World, CEC, 2009

By establishing innovation and enterprise as a key pillar of education and skills policy development, Ireland will ensure that it builds a strong foundation for sustainable growth for the longer term.

Recommendation:

Design curricula, learning processes and assessment mechanisms at all levels of the education system (from primary on) such that they promote the development of:

- Critical thinking;
- Self-directed learning;
- Communication and influencing skills;
- Team working; and
- Entrepreneurship and innovation skills.

[Department of Education and Skills]

Stimulating Demand for Innovation - the Role of Public Procurement

Markets are powerful drivers of innovation; indeed most innovations are in some way influenced by market/user demand¹⁴⁰. From a policy perspective, the most direct form of demand-side innovation stimulation is through public procurement. The approach recognises the range of goods and services that are purchased by the State, e.g. construction, public health, energy etc¹⁴¹.

¹³⁹ *Ahead of the Curve*, Enterprise Strategy Group, 2004

¹⁴⁰ *Making Public Support for Innovation in the EU more effective*, European Commission, 2009

¹⁴¹ In Ireland, the annual expended on public goods and services amounts to about €15 billion in total (circa 10 percent of GDP), *Report of the Procurement Innovation Group*, DETE, 2009

Improved public procurement practices can help foster market uptake of innovative products and services although the procuring organisation also needs to be well informed and less risk averse in order to encourage innovative products and solutions through the tender process. Pre-commercial procurement in particular (i.e. the procurement of R&D of new solutions that can out-perform those already available on the market) is a potentially powerful instrument to enhance mid- to long-term efficiency and effectiveness of public services as well as driving innovation performance within the participating companies¹⁴². A public procurement contract can also prove a valuable reference seller for innovative SMEs who are seeking to access international markets, including tendering for public contracts abroad.

Public Procurers can secure the best available solution in the marketplace while at the same time stimulating innovation

AND

getting value for money.

By using clear and robust output specifications, purchasers can leave companies the room to propose innovative solutions

Source: Buying Innovation - The 10 Step Guide, DETI, 2009

The Procurement Innovation Group underlined the importance of public procurement as the ‘biggest single customer-side driver that could be harnessed to catalyse innovation activity’¹⁴³. The Group made a number of recommendations to ensure innovation is embedded in procurement practices in Ireland and has developed *Buying Innovation - 10 Step Guide* for public sector organisations.

Initial steps have been taken with regard to promoting SME access to public sector contracts. These include the development of a Memorandum of Understanding between Enterprise Ireland (in support of its client companies) and major purchasing bodies within the State; and simplifying and standardising the tendering process and removing prohibitive pre-qualifying conditions through the work of the National Public Procurement Policy Unit (NPPPU) and the National Procurement Service (NPS). The guidelines published by the Department of Finance for contracting authorities, *Facilitating SME Participation in Public Procurement*, are a welcome first step¹⁴⁴.

The Innovation Taskforce has advocated a more strategic and ambitious approach to leveraging public procurement to promote innovation and recommends a flagship project approach where state procurement would be used to meet an identified public need and involve collaboration between MNCs, SMEs and HEI research. Continued focus is required to build on the work of the Procurement Innovation Group and Innovation Taskforce recommendation¹⁴⁵.

¹⁴² *Pre-commercial procurement: Driving innovation to ensure sustainable high quality public services in Europe*, European Commission, 2007

¹⁴³ *Using Public Procurement to Stimulate Innovation and SME Access to Public Contracts*, Report of the Public Procurement Group, DETE, 2009

¹⁴⁴ *Facilitating SME Participation in Public Procurement*, Circular 10/10, Department of Finance, 2010

¹⁴⁵ The *Knowledge Society Strategy* document, *Technology Actions to Support the Smart Economy*, DCENR, 2009 also recognises the potential role of public procurement in promoting innovation and advances the notion of ‘exemplar projects’ utilising Ireland as a test bed with the aim of exploiting strengths, demonstrating leadership, improving competitiveness and exporting innovations

Recommendations:

- Utilise public sector procurement in a more strategic way to stimulate innovation and enterprise development through:
 - Implementing the recommendations of the Procurement Innovation Group to ensure that innovation is embedded into public sector procurement practices (in conjunction with the National Procurement Service (NPS) and the National Public Procurement Policy Unit (NPPPU));

[Department of Finance / Whole of Government]
 - Continuing to work (in conjunction with Enterprise Ireland) with the National Procurement Service (NPS) and the National Public Procurement Policy Unit (NPPPU) to optimise SME accessibility to public sector procurement contracts and to make effective use of the Department of Finance guidelines *Facilitating SME Participation in Public Procurement*.

[Department of Enterprise, Trade and Innovation/ Enterprise Ireland/ contracting authorities]
- Implementing flagship public sector procurement initiatives which will act as demonstration models in international markets, and which will:
 - Lead to the development of commercial products/services which leverage Ireland's strengths and which address key national level challenges such as (but not limited to) eHealth, ICT usage, renewable energy and energy security (including convergence);
 - Stimulate multi-disciplinary collaboration and linkages between MNCs, SMEs and academia;
 - Act as a demonstration model for innovative procurement practices within the public sector; and
 - Demonstrate the innovative use of leading edge ICTs (incl. NGNs).

[Whole of Government/ Department of Enterprise, Trade and Innovation]

Pro-Innovation Regulatory Environment

The role of regulation in innovation is complex - it can either act as a barrier by creating additional costs¹⁴⁶ or as a promoter/demander of innovation through creating incentives and setting standards that lead to the production of improved products and services¹⁴⁷. This might include, for example, environmental or safety standards that stimulate innovation in new products and services. The challenge for government is to make regulation increasingly pro-innovation without compromising the protective role that it plays.

The Government White Paper, *Regulating Better*¹⁴⁸ accommodates the principle of utilising regulation as a strategic policy instrument - it introduces the notion of 'performance-based' regulation by which the policy-goal or 'end' is stressed rather than the 'means' - thereby

¹⁴⁶ Costs of regulation are discussed in Chapter 6 on Cost Competitiveness

¹⁴⁷ *Innovation Nation*, UK Department for Innovation, Universities and Skills, 2008

¹⁴⁸ *Regulating Better: A Government White Paper setting out six principles of Better Regulation*, Department of the Taoiseach, 2004

allowing the possibility of novel, rather than prescribed, solutions¹⁴⁹. For example, the objective of a regulation might be to reduce emissions of a particular pollutant - it may be possible to set the goal to be achieved in terms of the amount of emissions but leave flexibility for individual firms to decide how best to achieve this goal.

Some of the regulatory bodies in Ireland have adopted the promotion of innovation as a strategic goal, and the Annual Regulatory Forum¹⁵⁰ has reinforced the link between a robust and responsive regulatory system and enterprise development.

A greater level of understanding and sharing of best practice in relation to the utilisation of regulatory frameworks to support and stimulate innovation in enterprise is required. The Annual Regulatory Forum is a useful conduit to advance an agenda in this respect.

Recommendation:

Mandate the various regulatory bodies to employ regulation as a strategic policy instrument to promote innovation (for example through standard setting). Utilise the Annual Regulatory Forum as a mechanism to increase levels of understanding and sharing of best practice in Smarter Regulation and associated risk assessment and risk management.

[Department of the Taoiseach/Whole of Government]

Enhancing Ireland's IP Environment

Intellectual Property Rights (IPR) are fundamentally about protection and are employed in a defensive manner - to prevent copying, patent infringements and lawsuits. While this remains the case, firms are exploiting their IP (especially patents) in a wider variety of ways, and more strategically, to create firm value as they shift to more open models of innovation based on collaboration and external sourcing of knowledge¹⁵¹.

Against this backdrop, innovating firms and other knowledge generators need an adequate legal framework to protect knowledge and ideas. However, they also need to be aware of the value that IPRs confer and know how to exploit value in their IP. In addition, firms and entrepreneurs need to be able to find and access IP easily.

A strong IP framework (covering generation, capture, protection and exploitation of IP) is a critically important enabler of innovation to the extent that it can facilitate optimum levels of knowledge exchange, making good ideas available for commercialisation and maximising the economic return from investments by firms and the State in innovation and R&D.

According to a recent Forfás/DETI Review, Ireland's system for commercialising IP from HEIs is making strong progress given that many of the mechanisms were recently introduced¹⁵². It

¹⁴⁹ *Regulating Better: A Government White Paper setting out Six Principles of Better Regulation*, Department of the Taoiseach, 2004

¹⁵⁰ The *Annual Regulatory Forum* was announced by the Taoiseach as part of a range of measures contained in the *Government Statement on Economic Regulation* in October 2009. The first meeting of the Forum took place in February 2010 and it will continue to meet in the first quarter of each year

¹⁵¹ *Valuation and Exploitation of IP - STI Working Paper 2006/5*, OECD, 2006

¹⁵² *Review of Supports for Exploitation of Intellectual Property from Higher Education Research*, Forfás/DETI, 2010

contends that many of the issues and perceived instability within the system can be associated with what is in effect a nascent commercialisation system that has had insufficient time to bed down. The Review contains recommendations to enhance the effectiveness of Ireland's IP framework, addressing both short-term weaknesses and more strategic and longer term objectives. The recommendations aim to: refresh national policies and IP guidelines to reflect a broader understanding of innovation and knowledge transfer (e.g. skills, capabilities and networks); promote understanding of IP policies and guidelines; and enhance HEI/industry engagement in developing new commercialisation schemes.

The Review complements recommendations made by the Innovation Taskforce particularly with respect to the need to have consistency and uniformity within the current system. The Taskforce highlighted the need for a clear, consistent, speedy and predictable system for industry and HEI engagement and the need to ensure that the IP tax regime remains competitive to overseas innovation intensive companies¹⁵³.

Guided by these recommendations, it is important that action is taken to ensure that Ireland continues to build a supportive IP environment that will optimise the potential created by publicly funded HEI research and ensure that Ireland can exploit new opportunities in the trading and exploitation of IP.

Recommendation:

Continue to build a supportive framework that facilitates the optimum level of IP exchange and commercialisation while providing adequate protection for valuable knowledge.

Implementation of the recommendations of the Innovation Task Force with respect to IP and of the *Review of Supports for the Exploitation of IP from HE Research*, through the IP Policy Group and the IP Implementation Group, is critical in this regard.

[Department of Enterprise, Trade and Innovation]

Attracting and Retaining Mobile Talent - Creating Innovative Places

The market for talented innovative people is global and Ireland needs to be successful in attracting and retaining highly skilled individuals (including the Irish diaspora) who drive innovative firms, lead academic research, and become the entrepreneurs of the future¹⁵⁴. There are many influential factors impacting on the choices that people make about where they want to live and work; ranging from the quality of education and research; to ease of access and quality of communications infrastructures; to the general cost of living, including personal tax considerations; cost, quality and availability of personal and professional services; and cost and quality of property. Many recommendations in this report have a direct relevance to enhancing Ireland's attractiveness in these areas.

¹⁵³ Both the Innovation Taskforce and the Forfás/DETI Review highlight the potential for Ireland to establish competitive advantage internationally in terms of its IP framework. The establishment of the IP Policy Group and IP Implementation Group is critical in this regard

¹⁵⁴ This was also highlighted in the *Report of the Innovation Task Force, 2010* which recommended the development of 'an attractive and competitive high value Mobile Talent Regime' p. 63

Quality of place is also an important consideration. Despite the increasingly globalised nature of the business ecosystem, innovative and more knowledge-intensive activity tends to be spatially concentrated. An important basis for this tendency lies in a firm's ability to access tacit knowledge¹⁵⁵, which of its nature is difficult to exchange over long distances. In turn, highly talented and creative individuals tend to gravitate towards places where there are attractive and challenging employment opportunities, reinforcing innovative potential. Places that offer a high quality of life for such individuals, that is, with a critical mass of creative activity and workers, strong social diversity and tolerance, attractive neighbourhoods and cultural amenities develop a marked advantage in the competition for talent¹⁵⁶.

This underlines the importance of strategic spatial planning, and in particular, the importance of cities as drivers of competitiveness¹⁵⁷. It is critical that investments in infrastructure and capital investment programmes are focused on the development of competitive regions, anchored by dynamic urban centres of scale. Targeted investment aimed at building critical mass and the competitive position of the Gateways is of crucial importance.

There is also a need to establish closer relationships between the actors responsible for planning and developing the physical environment (and quality of place) and those involved in promoting enterprise development (including the enterprise agencies and higher education institutes)¹⁵⁸.

The Internet and related ICTs are fundamental enablers for innovation, linking innovators across the world and facilitating the flow of knowledge and open innovation¹⁵⁹. The development of a world class broadband infrastructure in Ireland is essential to the development of innovative places.

Relevant recommendations relating to prioritised infrastructure investments have been presented in Chapter 4 on Productivity and reflect the importance of Gateways and of NGNs.

¹⁵⁵ It is contended that the more easily codifiable (tradable) knowledge can be accessed, the more crucial tacit knowledge becomes for sustaining or enhancing the competitive position of firms. *Localised Learning and Industrial Competitiveness*, Maskell, P., and Malmberg, A., in Cambridge Journal of Economics, 1999

¹⁵⁶ *The Rise of the Creative Class*, Florida, R., 2002

¹⁵⁷ *Our Cities: Drivers of National Competitiveness*, National Competitiveness Council (NCC), 2009 and *Gateway Investment Priorities*, DOEHLG/Forfás, 2006

¹⁵⁸ *Regional Competitiveness Agendas - Overview, Findings and Actions*, Forfás, 2009

¹⁵⁹ *Interim Report on the OECD Innovation Strategy*, OECD, 2009

Strengthening the Environment for Entrepreneurship and Innovative SMEs

An innovation driven economy is one where entrepreneurship flourishes and the enterprise base grows and renews itself. Not all entrepreneurship is based on innovation, however, entrepreneurship is one of the key conduits through which innovations are carried to the marketplace and innovative, high performing firms are spawned.

- Entrepreneurship is a significant driver of economic growth and will have a key role to play in Ireland's return to sustainable growth and job creation.
- Entrepreneurship and the start-up companies that emanate from entrepreneurial activity are the feed-stock for future exports and employment.
- Start-ups are also one of the means by which new sectors take root in Ireland.

Ireland is to the fore in Europe in both the rate of early stage entrepreneurial activity (7.6 percent) and in the rate of established entrepreneurs (9 percent) among the adult population¹⁶⁰. In these more challenging times, many turn to entrepreneurship as a means of creating employment for themselves.

Although, in general, the environment for entrepreneurship in Ireland is supportive by international standards, many respondents to the Global Entrepreneurship Monitor (GEM) survey in Ireland were negative in terms of the:

- Burden of government bureaucracy;
- Treatment of new firms in terms of government procurement; and
- Relative speed of obtaining the required permits and licences.

Out of 58 of the world's most competitive countries, Ireland is ranked:

- 8th in terms of ease of doing business
- 10th with respect to the supportive nature of legislation for the creation of firms
- 22nd in terms of the number of days to start a business
- 10th for the number of procedures to start a business

Source: IMD World Competitiveness Yearbook 2010

All of the measures already discussed above have direct relevance to the creation of a supportive environment for entrepreneurship and growing innovative start-ups, including those relating to:

- Education and learning processes;
- Skills development;
- Investment in R&D, and competence centres;
- Strategic use of procurement;
- IP regime enhancements and a pro-innovation regulatory environment; and
- Reducing regulatory cost burdens.

Some additional measures are required to address specific barriers to successful entrepreneurship and the development of innovative small firms.

¹⁶⁰ *Entrepreneurship in Ireland 2008: Global Entrepreneurship Monitor (GEM)*, Fitzsimons, P. and O'Gorman, C., 2008

Incentivising Investment in Entrepreneurship and Innovative SMEs

Securing seed capital and finance for early stage expansion is a theme that has been persistently raised as an impediment to entrepreneurship, and was most recently highlighted as an issue by the Innovation Taskforce¹⁶¹.

The Business Expansion Scheme (BES) and the Seed Capital Scheme (SCS) are two measures designed to incentivise private investment in early stage companies and SMEs¹⁶². They provide income tax relief to private investors that are investing medium/long-term equity in private companies operating in qualifying business sectors and activities.

Business Expansion Scheme: allows an individual investor to obtain income tax relief on investments made in a qualifying trade up to a maximum of €150,000 per annum. Relief is available at the investor's highest rate of income tax.

Seed Capital Scheme: provides for a refund of tax already paid by an individual, when that individual sets up, and takes up employment in a new qualifying company. The investor can select the tax years for which they may claim refunds from any, or all, of the six years prior to the year of investment. The maximum relief in any one tax year is €100,000 for tax years 2007 onwards.

Although these schemes have been in operation for a number of years, there is an opportunity to increase uptake by those engaged in the qualifying activities as newly self-employed, and to encourage investors to purchase shares in BES companies. The enterprise development agencies have highlighted the need to improve access to relevant information for potential investors, and to enhance web-based promotion of the schemes¹⁶³.

The current BES and SCS schemes are due to cease at the end of 2013. The schemes help to stimulate private investment in early stage companies and it is important that they are extended beyond 2013 subject to securing EU Commission approval. The Department of Finance intends to initiate a review of the schemes in 2011. As well as evaluating their effectiveness, this review should identify modifications necessary to improve the schemes and enhance their attractiveness for investors.

Recommendations:

- Following a review of the Business Expansion and Seed Capital Schemes that should facilitate the incorporation of any necessary measures to enhance their effectiveness, and subject to any revision of the EU Risk Capital Guidelines, seek EU Commission approval for the extension of these schemes beyond the current deadline of 31 December 2013.

[Department of Finance/ Department of Enterprise, Trade and Innovation]

¹⁶¹ The *Innovation Fund*, originally proposed in the Government's Smart Economy document and subsequently endorsed by the Innovation Task Force, was launched on 12 July 2010 and will be managed by Enterprise Ireland and the National Pensions Reserve Fund

¹⁶² They have been in operation since 1984 and 1993 respectively, with successful and significant extension of the parameters of the schemes in the *Finance Act 2007*. Overview of BES and SCS available at: <http://www.revenue.ie/en/tax/it/leaflets/it55.html> and <http://www.revenue.ie/en/tax/it/leaflets/it15.html> respectively

¹⁶³ Forfás pre-budget submission 2010 - unpublished

- In the interim, continue to promote the Business Expansion and Seed Capital schemes to increase their uptake by firms, individuals and private investors and specifically:
 - Publish a full listing of trades that qualify for BES/SCS on the Office of the Revenue Commissioners website, including all trades under the Industrial Development (Services Industries) Order 2010.
 - Increase web-based promotion of the SCS and the BES, to be coordinated and led by a single existing body.
- [Department of Enterprise, Trade and Innovation/ Enterprise Ireland/ County and City Enterprise Boards]

Improving the Law in Relation to Bankruptcy

While ease of business creation is an important determinant of entrepreneurship, it is equally important that unnecessary disincentives are not placed in the path of potential entrepreneurs. In particular, the area of bankruptcy law would benefit from modernisation. The current bankruptcy laws (specifically the Bankruptcy Act 1988) are more severe than similar laws elsewhere, for example the UK, and may be contributing to a ‘fear of failure’ and thus impeding potential entrepreneurs. For example, under existing laws, anyone who becomes bankrupt in Ireland faces a 12 year waiting period to be discharged from bankruptcy, compared with just 12 months in the UK¹⁶⁴.

Recommendations to reform Ireland’s bankruptcy laws have been proposed by the Law Reform Commission¹⁶⁵. Their 14 point plan distinguishes those refusing to pay from those who cannot pay, promotes ‘freedom to fail’ through the introduction of a shorter discharge period for bankruptcy, and recommends the introduction of a non-judicial debt settlement system. The Minister for Justice published the Civil Law (Miscellaneous Provisions) Bill 2010 at the end of August. It provides for amendments to the existing law on bankruptcy, reducing the period of time that a person must wait until they can apply to have their bankruptcy discharged. The current provisions outlined in the Bill, however, would still not bring Irish law into line with other jurisdictions.

Recommendation:

The Civil Law (Miscellaneous Provisions) Bill 2010 should reflect the recommendations made by the Law Reform Commission to reform bankruptcy law. The Bill should continue to distinguish those refusing to pay from those who cannot pay and should remove disincentives to entrepreneurship.

[Department of Justice and Law Reform/ Department of Enterprise, Trade and Innovation]

¹⁶⁴ Under the UK Bankruptcy Law, the waiting period for discharge can be extended indefinitely if the person fails to cooperate in the bankruptcy proceedings and a bankruptcy order will appear on the person’s credit report for a minimum of six years from the date of the bankruptcy

¹⁶⁵ *Interim Report on Personal Debt Management and Debt Enforcement*, Law Reform Commission, 2010

Firm level Innovation Supports

The ‘system’ view of innovation underlines the key importance of creating a supportive environment for innovative activity. While the actions identified above aim to deliver an enhanced environment, there remains the challenge of mobilising individuals and firms to increase their innovative activity and optimise their engagement (and capacity to engage) with the innovation system. The enterprise agencies work directly with firms and respond to particular firm level needs with a suite of interventions, ranging from the provision of physical infrastructures such as incubator facilities, to financial incentives and advice to aid entrepreneurship and high potential start-ups, and direct supports for research and development and commercialisation (Appendix IX). They now also proactively target earlier stage start-ups and entrepreneurs from overseas that present high growth potential; this assists in accelerating the growth of sectors that are relatively underdeveloped or new to Ireland, and also leverages Ireland’s diaspora.

An evaluation of all agency programmes is recommended later in this report which will inform existing and future interventions to support innovation, as companies and the ‘system’ evolve. Considerations will include the appropriateness of existing firm level supports for services innovation and ensuring ease of access for Irish based SMEs to industry and academic-led collaborative R&D initiatives¹⁶⁶.

The focus on R&D and innovation should be maintained. Recommendations elsewhere in this report aimed at enhancing management development and facilitating access for SMEs to public sector procurement opportunities are complementary and reinforcing.

Alongside State investment in R&D infrastructures and provision of direct supports through the enterprise agencies, the R&D tax credit forms a central part of Ireland’s strategy to stimulate innovation and promote R&D activity in Ireland at the firm level. Recent budgets have increased the tax credit for qualifying expenditure from 20 percent to 25 percent and fixed the base year for calculating incremental R&D spend at 2003¹⁶⁷.

These enhancements have been welcomed by enterprise; however there is scope for further improvements which would lead to increased levels of company R&D¹⁶⁸. In particular, companies contend that the R&D tax credit should be capable of being recognised ‘above the profit line’ for *all* companies¹⁶⁹. This would enhance the cost competitiveness of an Ireland based R&D proposal and would allow the credit to be offset against total project costs, thus clearly reflecting the actual costs of a project.

¹⁶⁶ Within the EU Framework Programme, specific initiatives are in place to stimulate SME participation and to simplify the red tape associated with the Programme

¹⁶⁷ Currently the R&D tax credit can be offset against: (i) corporation tax in the current period (ii) with an option to offset against the corporation tax of the previous period and, (iii) where excess tax credit remains to claim a refund over a three year period subject to conditions or to carry forward the tax credit against future corporation tax liability

¹⁶⁸ *Maximising the Environment for Company Research and Development*, Advisory Council for Science, Technology and Innovation, 2010

¹⁶⁹ ‘Above-the-profit-line’ means allocating the ‘credit’ received directly against costs incurred. Currently, the R&D tax credit which is set against overall corporation tax is ‘below the profit line’ and it is contended that it is not factored into the evaluation of R&D proposals in instances where corporate decisions are made based on costs ‘above the profit line’

Clarity on the treatment of the credit ‘above the line’ has been provided in relation to Irish and International Accounting Standards¹⁷⁰. Efforts are ongoing to provide similar clarity, with regards to showing the benefit of the credit ‘above-the-line’, under US accounting rules. Finality on this is essential to advance this issue for enterprise.

Recommendation:

The R&D tax credit should be capable of being taken ‘above the line’ for *all* companies.

[Department of Finance]

Conclusion

There is now general awareness of the multidimensional nature of the innovation system and the dynamic and interactive nature of the innovation process. There is also an awareness of the increasing complexity of the innovation process. This will demand coherence and coordination across many existing policy areas and will require a whole of government approach¹⁷¹.

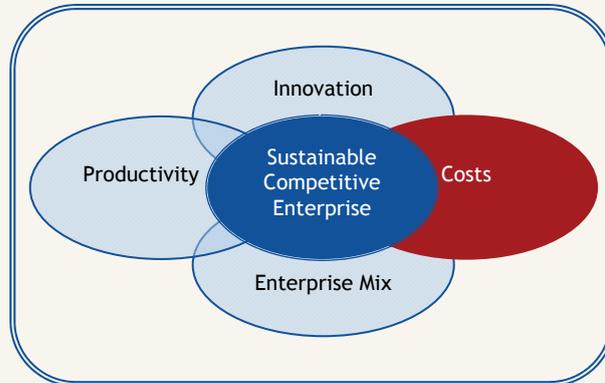
¹⁷⁰ Chartered Accountants Ireland

¹⁷¹ The *OECD Innovation Strategy*, OECD, 2010, has recognised this as a key challenge citing the enduring compartmentalised nature of innovation policy in many countries

6 Cost Competitiveness

Introduction

Cost efficiency is a strategic imperative for all firms in order to maximise potential returns in a competitive environment and to secure longer term sustainability. While firms adopt various measures to minimise operating and input costs, many elements of the cost base lie beyond their direct control. The wider cost environment can therefore be a key factor in determining where some companies choose to locate their operations; for others it is the difference between success and failure.



As an open economy that is reliant for growth on the performance of its exporting base, the issue of cost competitiveness comes into sharp focus for Ireland. Companies based in Ireland must be able to compete successfully in international markets. This is true not only for firms that are exporting but also those serving the domestic market with potential exposure to competition from overseas and who may be providing goods and services to exporting companies in Ireland¹⁷².

The Cost of Doing Business

The extended period of economic growth, until recently, led to significant increases in the costs of doing business in Ireland - particularly in relation to business inputs such as property charges, pay and incomes, utilities and business services. These factors, combined with unfavourable exchange rate movements¹⁷³, undermined Irish cost competitiveness.

Most of the recent price falls in Ireland, though welcome, may be a cyclical response to the downturn nationally and internationally rather than representing real and necessary structural changes in the Irish economy¹⁷⁴.

¹⁷² Locally trading firms occupy an important position in the cost base for enterprise, both directly as they supply goods and services to businesses, and indirectly through their influence on cost of living generally. A more cost competitive locally trading sector can result in increased Irish Economic Expenditure (IEE) by exporting firms and militate against rising wage demands

¹⁷³ According to the National Competitiveness Council (NCC), exchange rate movements account for approximately two thirds of the deterioration in price competitiveness since 2000, while higher inflation in Ireland accounts for the remaining third. *Annual Competitiveness Report: Volume 1*, NCC, 2009

¹⁷⁴ Downward pressure on prices also reflect very difficult trading conditions for many firms at the present time

Enhancing Cost Competitiveness

Pay Costs

Pay constitutes a large proportion of the input cost for many firms. During the latter years of the boom, wage inflation in Ireland was running at up to 50 percent higher than the euro zone average¹⁷⁵. Growth in labour costs has slowed appreciably but current wage levels still present a challenge in the changed economic environment. According to the ESRI, nominal wage costs will need to reduce by approximately 6 percent over the period to 2015 in order to restore international competitiveness¹⁷⁶. International evidence, however, indicates that it usually takes a number of years for wages to adjust to a new equilibrium.

Over the past few months, there has been anecdotal evidence of a downward adjustment in earnings and rates of pay. While there is evidence of recent reductions in rates of pay across a number of sectors up to Q4 2009, these falls are relatively small. Earnings, *excluding* irregular bonuses, still remain higher on an annual basis across *most* sectors - having increased by 1.3 percent over the year 2009¹⁷⁷.

It appears that firms in Ireland have continued to adjust numbers employed and/or contracted hours worked more consistently and to a greater extent than pay rates, which is reflected in the annual reductions in hours worked and numbers employed. Such measures are often temporary in nature and do not necessarily permanently address the underlying cost base.

While the Government has little direct control over private wage rates; it can exert some influence in the labour market, for example through the rate at which the National Minimum Wage (NMW) is set (the Government also controls wage rates in the public sector). There have been calls recently for a reduction in the NMW as a mechanism to stimulate demand for labour. Based on the relatively limited numbers of people earning the NMW, previous analysis conducted by Forfás suggests that any downward adjustment pursued in isolation from other labour market measures would have limited impact on overall wage competitiveness¹⁷⁸. What is required is a more holistic approach to achieve the objective of incentivising work and recruitment, restoring labour cost competitiveness and increasing

Some encouraging signs ...

Prices: The EU Harmonised Index of Consumer Prices (HICP) suggests that Irish prices are continuing to fall considerably more than prices elsewhere in the EU. Between April 2009 and 2010, the HICP in Ireland fell by 2.5 percent compared with a rise of 1.5 percent in the euro zone and an increase of 2.0 percent in the EU 27.

Source: CSO, Consumer Price Index, June 2010

Pay Costs: NCC analysis shows that growth rates in Irish labour costs slowed significantly in 2008/09 and that growth rates were lower than the EU 15 average.

Source: National Competitiveness Council

¹⁷⁵ *Annual Competitiveness Report 2009: Volume 2*, NCC, 2010

¹⁷⁶ *Recovery Scenarios for Ireland*, ESRI, 2009

¹⁷⁷ *The Earnings, Hours and Employment Costs Survey* (EHECS), CSO, Q4 2009

¹⁷⁸ A paper produced by Forfás in 2009 examined many of the key issues relating to the *National Minimum Wage* and made a number of observations. This analysis was submitted to the Senior Officials Group and presented to the Cabinet Committee on Economic Renewal (unpublished)

labour market flexibility overall. The fact that wage competitiveness cannot be disassociated from general cost competitiveness should also be considered.

A coordinated policy framework on incomes and labour cost competitiveness needs to be developed as a matter of priority - informed by the following:

- A review of social welfare rates - data provided by the Department of Social Protection has shown that since 2000, welfare payments have increased relative to both the minimum wage and average industrial earnings. Based on current replacement rates¹⁷⁹, there is little incentive for some of the unemployed cohort, for example, couples with dependent children, to take up NMW employment.
- A review of the Employment Regulation Orders (EROs) and Regulated Employment Agreements (REAs) mechanisms should be undertaken. Addressing the conditions of individual EROs and REAs could be a way of targeting improved competitiveness in sectors most affected by labour costs¹⁸⁰.
- A more in-depth study of wage setting mechanisms and levels in the Hotel and Catering, Food and Beverage, and Wholesale and Retail Sectors should be undertaken since these sectors are impacted most severely by labour cost issues.

Recommendation:

Develop a national policy to increase labour market flexibility with the objectives of restoring **labour cost competitiveness** and incentivising work and recruitment. The policy should incorporate aspects of:

- Social welfare;
- The national minimum wage;
- Maintaining a competitive tax wedge;
- Professional fees; and
- Other wage setting mechanisms in the economy (e.g. JLCs, EROs and REAs, as well as other local bargaining mechanisms in specific sectors - including retail / tourism).

[Department of Enterprise, Trade and Innovation/ Department of Finance/ Department of Social Protection/ Department of Justice and Law Reform]

¹⁷⁹ Replacement rates measure the ratio between a person's income when unemployed to the income they would receive on returning to employment

¹⁸⁰ Many employees in Ireland are covered by agreements dealing with the pay and working conditions of the employees concerned and may be included in an employee's contract of employment. The various agreements on pay and conditions made by Joint Labour Committees (JLCs) are known as Employment Regulation Orders (EROs). Agreements which result from negotiations between trade unions and employers are called Collective Agreements. If a Collective Agreement has been registered with the Labour Court, it is known as a Registered Employment Agreement (REA). Employers of workers covered by a JLC or a Collective Agreement are obliged to pay the wage rates and provide the conditions of employment prescribed by the ERO or REA. They must also display details of the current agreement in the workplace and keep records of wages. It is estimated that anywhere between 170,000 and 300,000 workers are covered by such agreements. At present, the Industrial Relations (Amendment) Bill 2009 is under consideration by the Oireachtas and, if passed, will reform some aspects relating to the operation of Registered Employment Agreements

Competition Policy

Competition is a key driver of efficiency and innovation in business. Customers - from individual shoppers to businesses - benefit from paying less and receiving greater choice and quality. This keeps prices and costs down and boosts Ireland's cost competitiveness. For example, if electricity costs fall due to greater competition, the cost of doing business falls.

Limited competition in many locally traded sectors of the Irish economy - for example, in legal and other professional services - has contributed to prices and costs being out of line with many of Ireland's competitors. Apart from the adverse effects on Irish consumers, this makes Irish exports more expensive and harder to sell.

The Competition Authority has a critical role to play in identifying and addressing anti-competitive behaviour to which locally traded sectors may be particularly prone as they have limited exposure to international markets. The Competition Authority has had some good successes in prosecuting offending companies and their principals but particular vigilance is required in future years to secure for consumers and businesses the benefits that robust enforcement of competition law can bring.

The Government also has a major role to play in enhancing competition through its power to implement and reform regulation in both the public and the private sectors. The airline industry demonstrates how the exposure of a dominant public sector firm to competition led to lower prices and costs for businesses while the removal of the Groceries Order highlights how government reform can enhance competition in the private sector.

The Competition Authority has recommended regulatory reform across a wide-range of sectors. These recommendations have seen the introduction of important changes in a number of areas but there is a significant outstanding agenda yet to be implemented, including a number of recommendations for regulatory reform of the legal profession¹⁸¹. Implementing the outstanding recommendations of the Authority will require that DETI continues to coordinate the agenda with the engagement and cooperation of a range of Government departments and bodies¹⁸².

The Competition Authority

The Competition Authority is an independent statutory body that enforces Irish and European competition law. It has a specific mandate to promote competition in the economy. It identifies restrictions on competition in laws and regulations, and advises the Government about the implications for competition of proposed legislation or regulations.

In addition to recommending regulatory reform, the Authority has the power to intervene where there is evidence of price fixing or an abuse of a dominant position. These actions if left unchecked harm Ireland's cost competitiveness. The Authority can also block mergers that substantially lessen competition.

¹⁸¹ *Small Business is Big Business: Report of the Small Business Forum*, The Small Business Forum, 2006 highlighted lack of competition within the legal sector as leading to unnecessary additional costs incurred by small business, given that they are major consumers of such services

¹⁸² In relation to future recommendations of the Competition Authority, the Government has made a commitment to publish a whole of Government response to recommendations from the Competition Authority within nine months of their publication. *Building Ireland's Smart Economy*, Department of the Taoiseach, 2008

Recommendations:

- Progress implementation of the recommendations of the Competition Authority as appropriate - priority areas in this regard are professional services¹⁸³ and medical services.

[Whole of Government]

- Continue to actively promote pro-competitive policies and ensure that new legislation and/or regulations relevant to enterprise are 'competition proofed' given that competition policy is central to maintaining a dynamic, efficient and competitive enterprise environment.

[Whole of Government/ Department of Enterprise, Trade and Innovation]

The Tax System

The tax system is part of the enterprise environment and cost base for all firms. It is an important factor of competitiveness for Irish based companies trading internationally. Striking the right balance between the generation of sufficient tax revenues from economic activity and maintaining an internationally competitive pro-business tax regime to support economic growth is a key challenge for governments everywhere and not least in the current economic climate.

Ireland's 12.5 percent corporation tax rate is a critical factor in enterprise development and a key component of Ireland's competitive offering for the attraction of FDI. The Government is committed to maintaining a pro-business corporate tax regime and has reaffirmed its ongoing commitment to the 12.5 percent corporation tax rate as key.

Informed by the changing needs of business, DETI is proactively working to ensure that Ireland's corporate tax policy is aligned with Ireland's trade and enterprise strategy - for example the ongoing development of Ireland's double taxation agreement (DTA) network.

In recognition of the importance of personal income taxation and associated employer's taxes in relation to the attracting and retaining skilled and internationally mobile labour, it

The Tax Wedge

The tax wedge is the difference between workers' take-home pay and the cost of employing them (e.g. income taxes and social-security contributions). A lower tax wedge incentivises people to enter the labour market.

- Ireland is among OECD countries that levy a low tax burden on labour income, and was below the OECD average in 2009.
- Ireland's tax wedge has decreased as a result of tax cuts implemented over the past 10 years. Families with children and especially lone parents with children at low income levels benefited the most.
- As a result of recent levy increases, it is estimated that the tax wedge increased from 22.9 percent in 2008 to 28.6 percent in 2009, for a single earner on average earnings. However, at 28.6 percent it represents the 6th lowest in the OECD (the OECD average is 36.4 percent).
- The tax wedge is higher for those on higher incomes - this could be a disincentive for highly skilled, mobile workers.

Source: OECD, Taxing Wages 2009

¹⁸³ Particularly the legal profession

is essential that the new Universal Social Contribution¹⁸⁴, announced in Budget 2010 is implemented in a manner that simplifies the system and has a positive impact on enterprise.

There is a need to achieve a €3 billion fiscal adjustment in Budget 2011 and to continue fiscal adjustments over coming years. It is essential that every effort is made to achieve this through reductions in public expenditure rather than an increase in taxation. If there are proposals to increase taxation, it is important to ensure that this is done in the least harmful way to economic growth, in line with the OECD tax hierarchy for growth. The hierarchy outlines that increases to corporate taxes are the most harmful for growth, followed by personal income taxes, with consumption taxes and recurrent taxes on immovable property being the least harmful¹⁸⁵.

Recommendation:

It is important that any proposals to increase taxation made in response to the need for fiscal adjustment are done in the least harmful way to economic growth and are in line with the OECD tax hierarchy for growth.

- The business tax burden should not increase as this would increase the risk of delaying future economic recovery; and
- Any changes to taxation should be in terms of broadening the base in line with the OECD tax hierarchy for growth and should not result in increased marginal income tax rates.

[Department of Finance]

The Cost of Regulatory Compliance

The regulatory framework in Ireland operates across a range of activities and economic sectors. Many aspects of regulation are designed to protect businesses, consumers and employees and, as noted in Chapter 5, can be utilised in a strategic way to drive innovation within the economy. An important issue, however, is that the regulatory environment can confer a considerable cost burden on business, both in terms of ‘substantive’ compliance costs (i.e. costs that businesses incur in order to comply with their obligations) and ‘administrative’ compliance costs (i.e. costs that businesses incur in complying with the information obligations in a regulation), diverting both time and resources away from more productive applications. This should not imply that less regulation is always optimal, and the downside risk of ‘light-touch’ regulation needs to be recognised. Instead, regulatory interventions should be designed so as to balance the need to be efficient and effective, while minimising unnecessary burdens on enterprise.

Significant work has been undertaken to date in the area of regulatory reform. The various elements of the *Better Regulation Strategy* overseen by the Department of the Taoiseach including the implementation of the *Government Statement on Economic Regulation*

¹⁸⁴ The new Universal Social Contribution will replace employee PRSI, the Health Levy and the Income Levy. It will be paid by everyone at a low rate on a wide base as a collective contribution to public services. Income Tax will apply on a progressive basis to those with higher incomes reflecting their capacity to make a greater contribution

¹⁸⁵ *Tax and Economic Growth: Economics Department Working Paper No. 620*, OECD, 2008

published in October 2009, are important steps in ensuring that Ireland's regulatory regime remains internationally competitive.

Recommendations of the High Level Group on Business Regulation have already achieved administrative savings of €20 million per annum to date and a wide range of additional proposals to reduce costs are being advanced. In line with European Commission objectives, the Government is seeking to achieve a 25 percent reduction in the administrative costs of regulation by 2012. The report of the Business Regulation Forum estimated that this initiative could ultimately lead to a saving of up to €500 million for Irish businesses annually¹⁸⁶. It is critical that the process is accelerated.

Recommendation:

Expedite the implementation of the Cross-Departmental process to reduce the administrative costs of regulation by 25 percent, by 2012.

[Department of Enterprise, Trade and Innovation/ Whole of Government]

Other Non-Pay Costs

Non-pay costs in Ireland have been the subject of extensive analysis to date, notably by the NCC, who over recent years has shown that Ireland compares poorly with other countries across a range of business inputs including: energy, waste, rents and property¹⁸⁷, and local authority charges. Government can take action in a number of ways to lessen the burden on enterprise and these are outlined below.

Energy

Energy costs can comprise a large component of the direct non-wage costs for some firms. For large business consumers such as the food sector, and other manufacturing sectors such as engineering, ICT, medical devices and pharmaceuticals, high energy prices can be particularly challenging. They also have an indirect influence in terms of the costs of transporting people and goods.

Up to 2008, Ireland had experienced a serious loss of price competitiveness in the energy domain¹⁸⁸. This was primarily due to our high dependence on imported fossil fuels and a

¹⁸⁶ *Report of the Business Regulation Forum*, April 2007. The figure is calculated based on a UK methodology as follows: 'If Ireland were to adopt a competitive administrative burden reduction target of 25 percent, it would work out at approximately €500 million annually (25 percent of 1.5 percent of €136 billion GNP), estimating the administrative burden of regulation to be similar to that calculated in the UK (1.5 percent of GDP). This is a measure of the potential benefit to business. It is important to note that the UK is ranked ahead of Ireland by the World Bank for Ease of Doing Business,' p.30

¹⁸⁷ *Cost of Doing Business in Ireland*, NCC, 2010. According to the NCC, while the cost of renting industrial and office units declined sharply in Ireland during 2009, the impact of these decreases on Irish cost competitiveness was relatively muted as there have also been significant cost decreases in many other countries. For example, the costs of renting a prime industrial unit fell by 18 percent in Ireland between 2008 and 2009. Ireland's ranking, however, improved by just one place to third most expensive, as rents fell in 12 of the 16 countries benchmarked

¹⁸⁸ *Cost of Doing Business in Ireland*, NCC, 2010

requirement for very significant investment in energy infrastructure, following two decades of under-investment in the networks. Structural factors, including geographic isolation and population density and dispersal, also pose particular infrastructural and cost challenges for Ireland.

The Government has therefore adopted a targeted strategy to reduce controllable energy costs for large business, which together with a cyclical fall in international gas prices, has had a significant positive impact on Ireland's competitiveness position. Electricity prices for large business categories have reduced on a cumulative basis by some 34 percent to 44 percent in the 18 months to June 2010¹⁸⁹. At the end of 2009, prices for the majority of business consumption bands were within six percent or less of the EU average. Government policy to increase competition in Ireland's electricity market through strong, independent regulation, is also leading to a more competitively priced electricity supply. Greater efficiencies in generation, transmission and distribution, driven by regulatory actions and enhanced competition, are also playing a role.

However, there is further scope to lower controllable costs in the Irish energy market. The continued implementation of the 2007 White Paper on Energy¹⁹⁰ is important in this regard, in order to ensure that a competitive, secure energy market is realised. The design and evaluation of support mechanisms for renewable energy should take account of its policy goals of enhancing security of supply, sustainability and competitiveness¹⁹¹.

Recommendation:

- The following measures can help to improve Ireland's energy costs position relative to competitor countries:
 - Continue to support the Commission for Energy Regulation (CER) in bringing the differential in controllable domestic costs (i.e. non-fuel costs) into line with costs in Ireland's main competitor countries¹⁹².
 - Calibrate the supports for renewable technologies to ensure that Ireland's targets are achieved while minimising the costs to enterprise¹⁹³.
 - Review the subsidies provided to peat while seeking to minimise the costs to energy users¹⁹⁴.
 - Working with the EU, ensure that Ireland is best positioned to avail of EU support for investment in strategic energy infrastructure.

[Department of Communications, Energy and Natural Resources]

¹⁸⁹ Eurostat - Energy and Environment

¹⁹⁰ *Delivering a Sustainable Energy Future for Ireland: The Energy Policy Framework 2007-2020*, Government White Paper on Energy, Department of Communications, Marine and Natural Resources, 2007

¹⁹¹ *Ibid.*

¹⁹² Examples of non-fuel costs include operating, maintenance and capital costs, particularly relevant in the case of transmission and distribution networks

¹⁹³ Ireland's range of renewable energy targets are set out in a number of relevant documents including: Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources; *Government White Paper on Energy 2007*; and *Carbon Budget*, DoEHLG, 2010

¹⁹⁴ *Statement on Energy*, National Competitiveness Council, 2009

Waste Costs

Ireland remains highly dependent on landfill facilities and in 2008, had one of the highest landfill costs compared to competitor countries¹⁹⁵. Recent falls in landfill prices, while welcome, reflect a significant reduction in demand as the economy has weakened rather than the effect of actual policies to reduce costs.

Regional waste management plans should be coordinated to maximise economies of scale and enable the market to offer more competitive pricing to businesses and households. Ireland's regionally based waste planning framework is hindering the delivery of cost effective, commercially viable waste treatment options as it tends to result in smaller scale, less commercially viable facilities than would be the case if infrastructure planning were done at a national level.

There is a need for emerging waste policy to provide certainty in order to encourage investment in infrastructure rollout, particularly private investment in waste infrastructure¹⁹⁶. It is also important that waste management policy decisions do not put Irish businesses at a disadvantage relative to their international competitors.

Sustainable economic development will require cost competitive modern waste management facilities across the internationally accepted waste management hierarchy¹⁹⁷. In this context waste policy needs to support national competitiveness objectives in the short and medium-term, and also to ensure that Ireland meets its environmental obligations.

Recommendation:

Ensure that Ireland has appropriate waste management infrastructure in place to meet the needs of enterprise. Waste charges to business should reflect the need to deliver cost competitive solutions and optimal environmental performance, while extracting maximum economic value from waste as a resource.

[Department of the Environment, Heritage and Local Government]

Local Authority Charges

It is important that the funding of Local Government does not adversely impact on the competitiveness of enterprises located or investing in Ireland. Local Authority charges have been raised by firms as an area of concern - and it is critical that such charges are transparent and reflect the true economic cost of serving their needs.

Local authorities are operating within a very challenging financial context at the present time and steps are being taken to reduce costs and increase efficiencies. Reform is also

¹⁹⁵ *Waste Management in Ireland: Benchmarking, Analysis and Policy Priorities*, Forfás, 2009

¹⁹⁶ A *Draft Statement of Waste Policy* was launched by DoEHLG for public consultation on July 1st 2010

¹⁹⁷ The hierarchy, contained in the *EU Waste Framework Directive (Directive 2008/98/EC)*, European Parliament and Council of the European Union, 2008 states that the most preferred option for waste management from an environmental sustainability perspective is prevention and minimisation of waste, followed by re-use and recycling, energy recovery (including incineration) and, the least favoured of all, disposal

required - a reduction in the number of local authority structures would provide greater economies of scale across the range of local authority services¹⁹⁸.

A broadening of the revenue raising base for local authorities, reducing the relative burden on the enterprise sector, needs to advance - including for example the extension of charges for treated water to domestic users and increasing the yield from property based taxes.

Recommendation:

Continue efforts to minimise Commercial Rates and Local Authority charges:

- Acknowledging the constrained budgetary environment, this could be done through efficiency measures and through adoption of user pay principles which shift the cost of delivering services to those who use them.
- Broadening the tax base at the local level should also be considered in this regard.

[Department of the Environment, Heritage and Local Government]

Promoting Cost Efficiency at the Level of the Firm

Individual firms must proactively exploit the potential to drive efficiency and achieve cost savings in a highly competitive global economy. Success in this area requires strong management capability and knowledge, effective management systems and a high level of awareness throughout the firm; it may also involve strategic capital investment to ensure enhanced performance in certain areas.

The Environmental Protection Agency (EPA) and the Sustainable Energy Authority of Ireland (SEAI) are both active in helping firms to improve efficiency and prevent waste.

Although the primary aim is to protect the environment and to reduce dependence on fossil fuels, initiatives undertaken usually generate significant cost savings for firms. SEAI also provides grant assistance where significant investments are being made by individual firms. The Accelerated Capital Allowances Scheme also supports investments for energy efficiency.

Businesses, particularly in the SME sector, must be supported in understanding how they can reduce their energy bills by taking advantage of the better value and choice, including discounts, offered by the competitive market, particularly as suppliers start offering energy efficiency services and products.

EPA - Green Business Initiative

The Green Business Initiative is specifically aimed at helping SMEs to save money and reduce their environmental impacts by becoming more resource efficient - using less energy, less water and less raw materials - in turn producing less waste and ultimately reducing costs. This is a free service provided by the EPA and includes site visit support.

SEAI - Supports to Business

SEAI provides free one to one advice and mentoring to SMEs and financial assistance to firms through programmes such as the Renewable Heat Deployment Programme and the Energy Efficient Retrofit Fund. It also facilitates the Large Industry Energy Network.

¹⁹⁸ The Efficiency Review Group issued its report in July 2010. It highlights further measures to cut costs, re-deploy resources and implement efficiency enhancements

The enterprise development agencies are actively promoting the services provided by both the EPA and SEAI and there is potential to expand the complementary environmental grant schemes recently introduced by the agencies under new EU guidelines. These firm level grants support investments by companies in a range of energy saving initiatives, including installation of Combined Heat and Power (CHP) and waste reduction, and typically have the potential to reduce overall energy costs by up to 20 percent as well as reducing carbon footprint. Such investments also present opportunities for the construction related goods and services sector.

Recommendation:

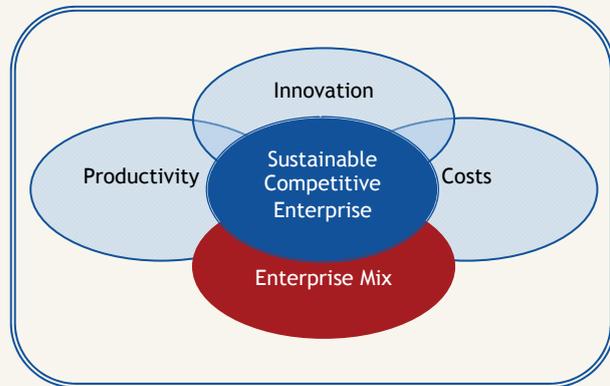
Further develop, coordinate and promote advisory and financial supports for energy efficiency initiatives within firms which have the dual impact of realising cost efficiencies and reducing emissions.

[Department of Communications, Energy and Natural Resources/ Sustainable Energy Authority of Ireland/ Enterprise Agencies]

7 Developing a Strong Enterprise Mix

Introduction

Global drivers of change present both new opportunities and challenges for enterprises in Ireland (Appendix V). The pace of change has accelerated, international competition has intensified and sectors and the ways of doing business are constantly evolving. Innovation, productivity and cost competitiveness apply to *all* sectors and individual firms and are critical to realising growth opportunities in the future.



Evidence shows that in Ireland today there is a concentration in sectors and markets that indicates a degree of vulnerability to external global and sector specific shocks. Building a strong enterprise mix reduces exposure and provides a more resilient and sustainable basis that will deliver both growth *and* jobs.

A stronger enterprise mix can be realised by:

- Building on Ireland's strengths in sectors to capitalise on emerging opportunities and to achieve the dual objective of delivering *both* growth and jobs;
- Developing existing and expanding to new geographic markets for exports, FDI and ODI.

Ireland's enterprise policy will continue to involve *both* the attraction and development of FDI *and* the establishment and development of indigenous companies. However, as efforts are focused on diversifying sectors and markets, it is opportune to ensure that adequate resources are effectively directed to:

- Accelerate and realise the potential of the indigenous base, building on its evolving capabilities and changing dynamic to realise a step-change in its contribution to growth and exports.

This chapter will consider each of these aspects in turn:

Sectors:	Employment forecasts The changing dynamic of sectors and associated opportunities
Markets:	Euro Zone and Emerging Economies
Indigenous:	Within the context of the preceding sections - assessing the potential to realise a step-change in contribution to growth and exports. The importance of stimulating entrepreneurship as the pipeline for future growth has been discussed in Chapter 5 on Innovation.

Concentration in Ireland's Enterprise Mix

The concentration in sectors and markets in Ireland's enterprise base today is apparent in that:

- Three sectors accounted for approximately 60 percent of Ireland's total exports in 2009 (Chemicals, ICT services and Business Services)¹⁹⁹;
- The US and UK are primary destination markets for merchandise at 37 percent, and services, at 31 percent. Volatility is also exacerbated because of exposure to non-EU currencies. For example, the dramatic depreciation of sterling that began in 2007 had severe implications for Irish exporters to the UK - merchandise exports to the UK fell by 15 percent (€2.4 billion) between 2008 and 2009²⁰⁰;
- This concentration in markets is most evident in the Irish owned enterprise base, particularly for consumer foods and business services where close to 50 percent is exported to the UK;
- Agency supported foreign multinationals contributed at least 70 percent to total exports in 2008²⁰¹.

This concentration may leave Ireland somewhat vulnerable, but at the same time provides a solid base from which to grow - and indeed these sectors have proved to be resilient and played a key role in maintaining Ireland's level of exports during this recession. Ireland's reputation, strong brands and track record in sectors such as Pharmaceuticals, International Financial Services, Food and Software is well established in many international markets. The significant increase in international trade in services has placed Ireland 9th in the world²⁰² and indicates that there is further scope for growth. A number of Irish firms are successful multinationals and there is potential to further develop the contribution of the indigenous base to growth and exports.

Sectors - Developing a Strong Enterprise Mix

Employment Forecasts

Chapter 2 presented a summary of the ESRI/ FÁS employment forecasts²⁰³ and high level trends for employment growth over the period to 2015. Although they provide some insights into future opportunities for growth (accepting a degree of uncertainty in sectoral forecasting) the high level NACE code categorisations do not capture the essence of what is happening *within* sectors, and *within* firms. This section, therefore, complements these forecasts with a more in-depth assessment of the changing dynamic of sectors. This assessment (and the sector specific overviews presented in Section B of this report) also

¹⁹⁹ Data is indicative, total exports of €151bn in 2009 derived from *External Trade*, CSO, August 2010 (goods exports) and *Balance of International Payments*, CSO, June 2010 (services exports)

²⁰⁰ *Impact of Sterling Depreciation on Enterprise in Ireland*, Forfás, 2009 (unpublished)

²⁰¹ Exports from agency supported foreign multinationals totalled almost €110 billion in 2008, *ABSEI 2008*, Forfás, 2010. Total exports amounted to €154 billion in 2008, *External Trade and Balance of International Payments*, CSO, June 2010. Foreign owned companies (agency supported and non-agency supported) are estimated to account for about 90 percent of total non IFSC exports

²⁰² *World Trade 2009, Prospects for 2010*, World Trade Organisation, 2010

²⁰³ *Occupational Employment Forecasts 2015*, FÁS/ ESRI, 2010

demonstrates the ways in which all sectors and firms can realise growth potential by embracing innovation and by enhancing productivity.

The Changing Dynamic of Sectors - Opportunities

Sectors Contribute Differently

Chemicals contribute approximately 30 percent to total exports but less than 2 percent to total employment

Retail and Wholesale contributes 14 percent to employment, and has limited exports

Tourism contributes 7 percent to employment and 2 percent to exports

Agri-food and drink contributes 2.6 percent to employment and 4.8 percent to export and accounts for 26 percent of IEE (Agency supported firms)

Sources: CSO, QNHS 2009; CSO External Trade and Balance of Payment data 2009; Forfás ABSEI 2008

The overarching objective is to realise the optimum potential from *all* sectors to deliver on growth *and* jobs throughout Ireland²⁰⁴.

Sectors contribute in different ways to Ireland's economy. This understanding is important for enterprise policy, particularly in times of high unemployment. Although the objective is for exports to become the key driver for economic growth, policy will also focus on locally trading and employment intensive sectors in order to optimise growth potential and sustainable enterprise development - taking a *whole of enterprise* approach.

While the nature of sectors and potential for internationalisation is constantly evolving, certain categories of sectors share similar characteristics and business needs based on their overall stage of development and market focus in Ireland. Recommendations (including those

contained in earlier chapters), which are of most significance to these sectoral categories, are highlighted. They will inform how Government might best focus its resources to stimulate growth and job creation - whether at the business environment level or through direct interventions at firm level. For instance, implementation of the recommendations relating to competition policy outlined in Chapter 6 will have a particular relevance to, and impact on, the competitiveness of those sectors which are primarily locally trading.

This categorisation is based on a detailed analysis of sectors in Ireland, and acknowledges the importance of both services *and* high-value manufacturing activities to Ireland's future economic growth, and the fact that the former distinction between these activities has become increasingly blurred. Overviews of individual sectors are presented in Section B, together with supplementary recommendations specific to individual sectors aimed at reducing barriers and/or accelerating growth potential.

²⁰⁴ In terms of regional development, IDA aims to secure at least 50 percent of investments to locations outside of Dublin and Cork by 2014. Enterprise Ireland's strategy is designed to ensure that opportunities for Irish enterprises and entrepreneurs are maximised throughout all regions

The following categorisations have been used and encompass both manufacturing and services activities:

- A Building on Strengths and Convergence;
- B Emerging Opportunities and Untapped Potential;
- C A Renewed Focus on Mature Sectors;
- D Locally Traded Services.

The nature and extent of direct supports provided by the enterprise development agencies will vary - depending on the market focus, maturity and stage of development of the sector and indeed, the capabilities and objectives of individual firms within sectors. The enterprise development agencies provide direct supports to export-oriented firms, from initial investment (entrepreneurship / FDI) to enhancing innovation and productivity involving both direct financial supports, and business and market advisory services - it is recommended that this core focus be maintained.

A Building on Strengths and Convergence

ICT

Health LifeSciences

International Financial Services

Agri-Food

Internationally Traded Services

These sectors will continue to play a central role in Ireland's export growth over the period to 2015 assuming a focus is maintained on their next stage of development. They currently contribute the greatest proportion to Ireland's exports, which at approximately €130 billion in 2009²⁰⁵ represented almost 85 percent of the total. The highest percentage export growth

over the past decade was in business and market services (primarily in supply chain management)²⁰⁶ and offers significant future potential. This cohort employed almost 195,000 people at end 2009²⁰⁷.

Ireland has developed international recognition in these sectors, based on strong brands and a track record in regulatory compliance²⁰⁸. Both foreign and Irish owned companies operate in these sectors. In general, however, the Irish entities are challenged in terms of reaching scale, although this points to potential, rather than a criticism of performance to date.

The enterprise development agencies provide direct financial and soft supports to firms within these sectors through relevant programmes and appropriate to the specific needs and potential of the firm. In order to realise further potential, the following are particularly important:

²⁰⁵ Forfás calculations based on *External Trade and Balance of International Payments*, CSO, March 2010; and *ABSEI 2008* (export data for medical device sector), Forfás, 2010

²⁰⁶ Categorized as Merchanting in CSO data

²⁰⁷ CSO, ABSEI, Employment data from the Finance Dublin Yearbook 2010, 2009 data

²⁰⁸ Issues regarding regulation in financial services and institutions relate to Ireland's domestically trading entities, and not to internationally trading activities

- A need for increased investments by firms in R&D and Innovation - in products, services, process, business models and/or organisational methods - and an ability to source, commercialise and/or adapt relevant technologies²⁰⁹;
- A strong leadership to drive growth in the innovative firm operating in an intensely competitive global market, complemented by a strong management capability. Effective leadership and ambition is critical for the successful scaling of a firm;
- An in-depth knowledge of customers and new market potential, coupled with the skills to identify and capture new opportunities - language skills, aligned with technical skills can result in a distinct advantage when targeting foreign markets;
- A willingness to engage in alliances and partnerships, to complement existing strengths, to address new markets and clients and/or to build scale;
- Risk management, regulatory compliance and adherence to high quality standards are fundamental characteristics of these sectors. The development of skills and capabilities in these areas is key so that Ireland continues to build on its effective track record to date and international reputation²¹⁰; and
- Access to high speed broadband networks *and* proactive and pervasive use of ICTs - both within and outside the firm as well as within the public sector (eGovernment) - as an enabler for enhanced productivity, innovation and market access.

Convergence

Given the strengths that Ireland has in a number of the sectors that demonstrate more immediate potential in convergence, it is well placed to take a lead position²¹¹. Ireland's small scale can be a distinct advantage given that convergence requires effective connections across formerly discrete activities and sectors.

Convergence is a broad concept. It is primarily driven and enabled by advances in technologies, and results in huge potential in new products and services and the emergence of 'new' sectors. Convergence presents opportunities, not only for high technology sectors but also for many of Ireland's traditional sectors and competencies in, for example, engineering and software development. The opportunities are boundless and will continue to primarily stem from the firm.

The enterprise development agencies²¹² have identified specific areas of focus, including personalised healthcare, combination medical products, clean technology, digital media convergence, nutraceuticals and functional foods, and financial mathematics/informatics. Within these broader areas, emerging initiatives such as the Assistive and Remote

²⁰⁹ State funded R&D in Ireland plays a key role in this context, and ensuring that it is easy for firms to identify and access relevant R&D - particularly SMEs - has been discussed in Chapter 5

²¹⁰ The recent global and domestic financial crisis requires a speedy response to enhance transparency and restore confidence in the Internationally Traded Financial Services sector

²¹¹ *Technology and Interface Challenges for the 21st Century*, De Man, H., 2010 - Sectors include LifeSciences, food, manufacturing/engineering, financial services, environmental, construction, entertainment and ICT

²¹² IDA Ireland, Enterprise Ireland and Science Foundation Ireland

Technology Services for Independent Living and proposals to establish Ireland as a Digital Trade Facilitation Hub²¹³ are directly relevant.

The role of government is relevant in the following areas:

- Encouraging companies and research centres to work across sectors, technologies and disciplines through alliances, networks, collaborations etc. The enterprise development agencies themselves need to enhance their own collaborative efforts. The recently established Convergence Network involving industry representative groups and the development agencies is a welcome first step;
- ‘Proofing’ and adapting the regulatory environment as required so that it is conducive to the needs of convergent products, business models, data protection and alliances, and stimulates innovation;
- Ensuring Ireland has the skills base to take advantage of convergence based on strengths in core capabilities, particularly STEM, coupled with an ability to work in multi-disciplinary teams.

Recommendation:

Across and within all business sectors firms are increasingly engaging in collaborative activities/networks with academic institutions and other companies to access new knowledge/specialist expertise, improve RD&I outputs, and streamline processes to develop new products and services.

Existing supports should be reviewed and/or enhanced (as appropriate) to ensure that they facilitate/promote the development of networks and collaborative projects to achieve specific economic objectives; enhanced productivity, increased exports and/or innovation. For instance, through facilitating the pooling of grants for feasibility studies.

[Department of Enterprise, Trade and Innovation]

In terms of overarching recommendations outlined in the previous chapters, the following are of particular relevance to ensure the continued evolution and development of firms within this cohort of sectors:

- The direct supports available through the enterprise development agencies, to stimulate engagement in RD&I and transformational change, to support market development, leadership/management development and skills, are critical enablers to firms realising a step-change in their operations.
- The recommendations focused on education, skills development and work placements to ensure that the necessary skills base and talent is available are key.
- The recommendation requiring enhanced collaborative approaches by the enterprise development agencies; particularly relating to convergence opportunities will increase the potential for cross firm linkages, particularly linkages between Irish and foreign owned.
- The recommended flagship projects through public procurement mechanisms could act as international demonstration sites for convergence based on a multi-disciplinary/cross sectoral focus, for e.g. eHealth.

²¹³ *Digital Trade Facilitation Hub, Forfás, 2010 (unpublished). Trade facilitation and trade data exchange can generate a range of services in all the businesses associated with international trade*

B Emerging Opportunities and Untapped Potential

This category includes sectors which offer new potential for Ireland:

Green Technologies:	Have emerged as a result of advances in technology and/or regulation, and driving change across a wide range of sectors.
Creative industries:	Have a pervasive impact across all enterprises and potential to drive economic growth.
Marine and Maritime ²¹⁴ :	Is a broad and multi-faceted sector - relatively underdeveloped given Ireland's rich and distinctive natural resources.
Healthcare (eHealth) and Education Services:	Services in these sectors have been delivered primarily by the public sector over the past decades. In more recent years there is evidence of increased private sector provision in the domestic market and potential for internationalisation.

The lack of disaggregated data, and/or specific categorisations makes it difficult to accurately assess the contribution of the sectors in this category to Ireland's economic growth over the past number of years. Suffice to say that none is fundamentally new to Ireland's economic fabric. Many studies have been undertaken in the past to identify opportunities and the actions required to stimulate growth - but with relatively little apparent impact²¹⁵.

Global trends indicate high growth in demand for products and services delivered by these sectors, and there are new market opportunities in emerging and developing economies. Ireland has the capabilities to realise significant growth - both in terms of exports and employment, and for indigenous and foreign firms. It is opportune to revisit the potential and to make concerted efforts to identify and to overcome barriers where they exist.

Green technologies, creative industries and marine are each broad sectors, encompassing a range of very different sub-sectors, with very different needs. This complexity itself presents a challenge. At the same time, they have an influence across the economy, such that each sector's own development will have a positive 'knock on' impact across a wide range of other sectors. For example:

- Environmental concerns will impact on all sectors: in how they reduce waste through new materials and production processes; in where they source energy and optimise usage; in the development of environmentally friendly products; and in how they gain market share through 'greening' etc.
- The marine sector relies on Ireland's seas and deals with many competing demands involving shipping lanes, fishing rights, harbour development, tourism and leisure needs.
- The creative industries encompass a diverse range of activities, including: the digital world (games, animation); design and branding; publications and media; and cultural activities (film, theatre). They also influence the potential of a much broader range of

²¹⁴ Employment and exports in marine related activities are captured under different sector headings e.g. tourism, transport, logistics and R&D. It is not possible to disaggregate this information from CSO data

²¹⁵ With some exceptions including for example electronic/digital games

sectors, including food (e.g. branding), medical technologies (e.g. design), and tourism (e.g. cultural products).

- In the case of education and healthcare services, Ireland has already developed core skills that are transferable between the public and private sector and/or can be further enhanced - e.g. provision of in-community 'e' healthcare services. A structured programme of re-skilling is important in this context.

For each of these sectors there exists a basis for genuine dynamic clusters to emerge. The definition of what precisely constitutes a cluster can vary - in broad terms, a cluster involves geographic concentrations of interconnected companies, specialised suppliers, service providers, firms in related industries and associated institutions in particular fields that compete but also cooperate. Although industry clusters are primarily a market driven phenomenon, public policy plays an important role in accelerating their emergence and growth²¹⁶.

Proactive interaction between the actors is an essential component, as is a clear strategy and vision, and strong leadership²¹⁷.

In most instances for this cohort of sectors, there is no clear 'ownership' by government department or agency to enable the development of each of these sectors in their entirety. Some steps have been taken; for example, in the case of green tech - with DCENR, IDA Ireland, Enterprise Ireland, SEAI and SFI working collaboratively; and in the case of education services - with Enterprise Ireland now responsible for Education Ireland.

Recommendation:

Ensure that there is strong and clearly designated 'ownership' at Department and Agency level to deliver a cohesive, coordinated and comprehensive approach to develop sectors that cross areas of responsibility at Government Department/Agency level. These would include Clean Technology, Creative Industries, Marine, Food, Education Services and Healthcare Services (eHealth)²¹⁸.

Consideration could also be given to the appointment of a Cluster Development Manager (on a pilot basis to any of these sectors), co-funded by Government (through its agencies) and the private sector.

[Department of Enterprise, Trade and Innovation/ Whole of Government]

²¹⁶ *Strategic Cluster Development: Applying Strategic Policy Intelligence to Create a Joint Research Agenda*, Regional Strategies and Innovation (RSI) Group, Steinbeis-Europa-Zentrum, 2008. A number of valuable insights into European cluster policy, highlighting the importance of the common market, and of feed-back mechanisms as part of a systemic evaluation process are also presented in the report *EU Cluster Mapping and Strengthening Clusters in Europe*, Europe INNOVA Paper No 12, 2009

²¹⁷ The Finnish Clean Technology Cluster is recognised as one of the world's leading cluster organisations (co-funded by State and the private sector). <http://cleantech.com/news/5640/top-cleantech-clusters>

²¹⁸ *Food Harvest 2020*, published July 2010, recommended a collaborative approach to monitor progress, and to facilitate joined up action

In terms of the overarching recommendations outlined in previous chapters the following are of particular relevance to ensure the accelerated development of firms within this cohort of sectors:

- The cross agency collaborative approach is crucial to identifying and capturing the new and emerging market opportunities in a coordinated way, as are the recommendations specific to realising market potential.
- The recommendation that supports be enhanced so that they facilitate the establishment of networks and alliances across firms, industry associations and research institutes is particularly relevant given the diversity within each of these sectors.
- The existing suite of supports that are provided by the enterprise agencies, focused on initial investment, innovation, management development and sales and marketing skills are directly relevant, tailored to the specific needs of firms²¹⁹.

C A Renewed Focus on Mature Sectors

Tourism and Hospitality
Retail and Wholesale
Transport, Logistics and Distribution
Construction

Often the desire to seek out ‘new’ and ‘smart’ sectors can mean that the role of more traditional and long-established sectors is considered to be of less importance. In some instances this can be a valid interpretation, but is less so today given the advances in technology and reduced barriers to international trade for services in particular.

The sectors in this category are largely comprised of Irish owned companies - a substantial proportion of which includes small and micro firms, with many being family owned. They trade primarily on domestic markets, while tourism contributes toward exports through foreign earnings generated from overseas visitors²²⁰.

They currently make a high contribution to employment in Ireland, employing approximately 614,000 people or 33 percent of the workforce²²¹. Although the ESRI/ FÁS forecasts estimate that these sectors will show modest employment growth over the period to 2015, there is a high degree of churn where new jobs become available for individuals as others are lost.

For these sectors, it is important that enterprise policy remains focused on ensuring employment is *sustained* to the extent possible; that individuals are skilled appropriately to take advantage of new opportunities; and that firms are well positioned for growth in the longer term.

²¹⁹ There are a number of agencies involved in these sectors beyond those under the remit of DETI, e.g. Maritime is supported by the Irish Maritime Development Organisation (IMDO) and the Department of Communications, Energy and Natural Resources. Food is supported by An Bord Bia and the Department of Agriculture, Fisheries and Food (as well as Enterprise Ireland and DETI)

²²⁰ Sector specific studies have been undertaken by the Expert Group on Future Skills Needs - see Appendix IV

²²¹ *Quarterly National Household Survey*, CSO, Q1 2010 (June Release)

The following identifies the areas of focus and the business environment needs for these sectors:

- At a minimum, there is significant potential for firms to increase their contribution to economic recovery through increased productivity across the entire supply chain. All firms need to adapt to the use of ICTs. Access to competitively priced, high speed broadband networks is essential;
- Firms need to engage in the use of the Internet and social networks to capture ‘new’ niche high growth opportunities and to realise the possibility of developing and/or increasing exports and internationalisation prospects²²²;
- The competitive environment is changing as international players enter the Irish market. Firms in these sectors need to embrace innovation in order to respond to customer demands for increased specialisation, customisation and personalisation;
- The nature of skills required is changing and there is a need to continuously upskill the workforce so that they meet the changing needs of the sectors - ICT skills are particularly relevant. Targeted re-skilling of the unemployed will also equip individuals to take up opportunities as they arise;
- More developed sales and marketing skills would enhance the potential for firms to address export markets;
- Because of the high employment intensity and, for some the 24/7 nature of the sector, the cost of labour is a key issue, and has an indirect impact on Ireland’s overall competitiveness.

Tech Check (CEBs), Webcheck (Fáilte Ireland) and Innovation Voucher (Enterprise Ireland) programmes provide direct supports to incentivise engagement in IT and innovation, and are particularly relevant for small and micro firms.

In terms of the overarching recommendations outlined in previous chapters the following are of particular relevance to ensure the continued evolution and development of firms within this category of sectors:

- For companies not intending to expand into international markets²²³, government interventions at the business environment level are the most appropriate - and in particular, the actions relating to availability of, and access to, high speed broadband, and stimulating re-skilling of both people *in* the workforce (including management development) and the unemployed.
- Of critical importance for cost competitiveness and to enhance the potential for job creation is the action relating to the development of a national policy to increase labour market flexibility and restore labour cost competitiveness.

²²² Since the publication of the *Services Strategy* in 2008, Enterprise Ireland has established its *Going Global* initiative. This initiative is aimed at supporting firms that are focused on the domestic market to date to realise the opportunity to internationalise

²²³ IDA Ireland and Enterprise Ireland programmes are available to exporting firms within these sectors (and firms with potential/ambition to export); Fáilte Ireland has direct responsibility for Tourism

D Locally Traded Activities

Although the opportunity to export presents itself for all sectors, many firms will continue to focus exclusively on the domestic market. Many will remain small scale by choice. They include (but are not limited to) professional and business services (legal, accounting, IT), medical and personal services (automotive, leisure, beauty).

These small firms make an important contribution to employment and to Ireland's overall competitiveness. Locally available, competitive and efficiently produced goods and services can stimulate increased expenditure in Ireland by exporting firms, and direct economic benefits accrue through lower prices, enhanced consumer welfare, etc.

Regulation and tax exemptions that reduce the burden for SMEs benefit this sector including, for example, exemption limits for VAT and corporation tax, the Employment Subsidy and PRSI exemption schemes. A limited range of financial incentives were introduced in response to the work of the Small Business Forum aimed at enhancing productivity and innovation²²⁴. They align with the critical success factors outlined in this report. The recent report of the Management Development Council highlights the need for, and value of, investment in management development for *all* firms, and resources should be made available to implement the recommendations.

It would not be appropriate to extend financial supports currently available to internationally trading firms to this category of firms because of displacement effects. Greater impact will be achieved through measures that enhance the overall business environment to improve competition, productivity and costs²²⁵, and specifically:

- Ensuring that current laws, rules and customs that restrict competition are addressed, particularly in relation to important segments that remain relatively sheltered from international competition;
- Addressing issues in relation to labour costs that impact on service delivery and workforce flexibility;
- Ensuring availability of and ease of access to competitively priced broadband, aligned with raising the awareness of the potential of ICTs for small and micro firms to enhance productivity.

Overarching recommendations outlined in previous chapters that are most relevant to optimise the potential of locally trading activities include:

- Effective competition and regulation policy is critical to ensure an open and dynamic domestic market.
- The labour market policy recommendation would have a direct impact on this sector and would contribute to reduction in costs and accelerate the potential for job creation.
- Access to broadband facilitates local firms throughout the regions to increase productivity and reach new customers and markets.
- The recommendations to enhance productivity are directly relevant, with those focused on skills development likely to have more immediate impact.

²²⁴ Innovation Vouchers and Tech Check

²²⁵ Cost competitiveness and related actions are detailed in Chapter 6

Markets - Developing a Strong Enterprise Mix

Ireland's trading base has demonstrated remarkable resilience in spite of the global economic downturn and the challenging domestic fiscal environment. Trade encompasses exports, ODI and imports. Total exports from Ireland in 2009 amounted to €151 billion²²⁶. Although this represented a decline of two percent in value terms over the previous year, Ireland's export performance compared very favourably with a global decline of 20 percent²²⁷. Ireland's stock of overseas investment increased almost seven fold between 2000 and 2009 to €192.4 billion, greatly exceeding the increase in the EU of 158 percent²²⁸.

At the same time, the concentrations in sectors and markets highlighted earlier leaves Ireland somewhat vulnerable in an environment of intensified competition, global financial turbulence and fluctuating international demand patterns. The forthcoming Government Strategy, *Trading and Investing in a Smart Economy*, will present a more in-depth analysis and suite of actions for building on existing strengths and driving trade relations in new and emerging economies²²⁹.

World trade is set to rebound in 2010 growing by 9.5 percent and much of this growth will be driven by emerging and developing economies where trade is expected to grow by 11 percent²³⁰. Opportunities exist to develop and build new trading relationships with the rapidly emerging economies, namely the BRIC countries of Brazil, Russia, India, and China²³¹. Closer to home, the euro zone market, which offers the benefit of no exposure to currency fluctuations, remains largely untapped and there is significant scope to increase trade with the existing and new EU member states.

The Euro Zone and the New EU Member States

Through Ireland's membership of the EU, businesses trading from here have access to an EU market of half a billion people. However, despite the benefits of the European Single Market, cultural similarities and the elimination of currency risk, exports to euro zone countries are relatively low and have remained relatively constant in percentage terms since 2004²³². Ireland's success in attracting FDI from European countries has also been limited - although perhaps understandable, given that a key aspect of Ireland's attractiveness for FDI is based on access to a single European market.

Key challenges cited by companies in expanding into EU member countries include the longer sales cycles, the high levels of resources and working capital required to establish a presence in these markets, and the requirement for language skills coupled with technical/market expertise. Enterprise Ireland recently expanded its overseas network and has adopted a pan-European (rather than country specific) approach to working with client companies.

²²⁶ Based on *External Trade*, CSO, August 2010 (merchandise exports) and *Balance of International Payments*, CSO, June 2010 (services exports)

²²⁷ *Trade Statistics Database*, World Trade Organisation, 2010 - http://www.wto.org/english/res_e/statis_e/statis_e.htm#database

²²⁸ *World Investment Report 2009*, United Nations Conference on Trade & Development (UNCTAD), 2009

²²⁹ *Trading and Investing in a Smart Economy: A Strategy and Action Plan for Irish Trade, Tourism and Investment to 2015*, Department of Enterprise, Trade and Innovation, forthcoming

²³⁰ *World Trade 2009, Prospects for 2010*, World Trade Organisation, 2010

²³¹ To which can be added South Africa, the Gulf States, Turkey, Mexico, Egypt, Thailand, Indonesia, Malaysia and Vietnam

²³² *Review of the European Single Market*, Forfás, 2008

Emerging Economies

Overall trade has grown faster in non-OECD countries in the last 20 years than in the OECD areas. While the overall share of imports into the emerging BRIC markets and the Gulf States is still relatively small, their rapid growth rates indicate that these markets are becoming important destinations. Growing populations, expanding commercial activities and rising disposable incomes combine to stimulate increased demand - particularly in sectors where Ireland has a strong reputation and capability. Irish based enterprises are already establishing a growing presence in emerging economies and significant progress has been made in China; merchandise exports to China tripled between 2000 and 2009²³³.

The increasing importance of developing countries as sources and destinations of FDI flows is also becoming apparent. In the two years from 2006 to 2008 the number of BRIC companies on the Global 500 more than quadrupled from 15 to 62. Ireland has an opportunity to market itself as a tried and tested base for FDI to Asian countries seeking to establish a presence in the EMEA markets. In this context, it is essential that Ireland's DTA network with potential trading partners is developed and that strong Irish participation in trade negotiations at the EU level is continued.

The concentration that is evident today in the UK and US markets has been based on a combination of factors. These include a strong knowledge and understanding of these markets, proven track record, historical and cultural linkages, the nature of the FDI base, and geographic proximity in the case of the UK. These factors will not necessarily lead to success in the emerging economies. The latter present distinct challenges in terms of language and cultural attributes as well as differences in business cultures, practices and regulation. For instance, though increasingly less restrictive, the FDI framework in India specifically favours the partnership or acquisition approach for market entry rather than Greenfield developments.

Developing strong trade partnerships with these countries will require sustained commitment of resources, both financial and political, over the medium-term, to market Ireland across all potential linkages from trade and investment to tourism, education, science and technology.

Challenges highlighted by firms in developing trade linkages with emerging economies include:

- The relatively onerous requirements on citizens from emerging economies for obtaining work and/or travel visas for Ireland; Ireland's non-membership of Schengen, which puts Ireland at a relative disadvantage to members of Schengen whereby a single visa works across the Schengen Area²³⁴ has a significant negative impact on the Tourism sector in particular; and

²³³ Merchandise exports to China are primarily made up of ICT related products which accounted for approximately 70 percent of exports to China in 2008. Services exports to China are more varied; business services (operational leasing, architectural, engineering and other technical services) accounted for close to half of services exports to China in 2008. *External Trade and Balance of International Payments*, CSO, 2010

²³⁴ The Schengen Convention is an agreement among some European states which allows for the abolition of systematic border controls between the participating countries. It also includes provisions on common policy with regard to visas for short stays, the harmonisation of external border controls, and cross-border police and judicial co-operation

- Difficulties in accessing trade finance, completion bonds and related services for trading activities in emerging economies. The relatively limited international reach of the banking sector and the limited presence of international banks in Ireland have a direct impact in this regard.

In relation to the visa issue, the Department of Justice and Law Reform are currently examining a number of options that would enhance Ireland's attractiveness. These include: the possibility of issuing multiple entry visas to certain categories of visitors; reducing the costs associated with certain categories of visa applications; and other mechanisms designed to make the visa process more user friendly.

Succeeding in International Markets

Successful entry and expansion into international markets through exporting or ODI demands a comprehensive understanding of target markets, including language, customer preferences, distribution channels and networks, as well as business culture, practices and regulations. It requires companies to develop a strong reputation and brand that is recognised in their target markets and that enables them to compete with local and international competitors. It also requires the management and leadership capacity to develop and optimise business relationships on an international scale.

These skills and resource requirements are not new but take on an increasing importance in the context of the accelerated pace of change and extent of global competition. They represent significant challenges for all companies; although particularly so for SMEs that often lack the financial and human resources needed to take on the challenge of internationalisation.

A number of Government Departments and Agencies promote Ireland and Irish enterprise internationally through marketing campaigns, trade missions and diplomatic activities²³⁵. A proactive international marketing programme, based on a suite of reinforcing messages and consistently delivered by all Government and Agency representatives, is essential. This is even more important in the emerging markets which have limited knowledge of Ireland and its enterprise base.

IDA Ireland and Enterprise Ireland both have a network of international offices; IDA Ireland, as a base from which to market Ireland as a location for foreign investment, and Enterprise Ireland as a network to facilitate Irish owned companies to enter new markets and to provide information for companies wanting to source goods and services from Ireland. In recent years, the enterprise agencies have expanded their network of overseas offices to provide enhanced supports for companies developing a presence in emerging markets; including offices in Brazil and India. In response to the continuing investment from US companies, and to further drive the development of business opportunities, IDA Ireland opened two new offices in the US (Boston and Orange County, California) in 2008.

Increasingly, as IDA Ireland attracts more firms to Ireland that include marketing and/or sales operations, the nature of in-market supports provided by Enterprise Ireland are likely to be more relevant.

²³⁵ Key Government departments and agencies charged with promoting Ireland and Irish enterprise internationally include the Department of Foreign Affairs, Tourism Ireland, Bord Bia and the enterprise development agencies.

Figure 10: Enterprise Development Agencies - International Office Network



Map Key:

- ▲ IDA Ireland
- ◆ Enterprise Ireland

North and South America	Europe	Middle East and Africa	Asia Pacific
Atlanta	Amsterdam	Dubai	Beijing
Boston	Brussels	Riyadh	Guangzhou
Chicago	Budapest		Hong Kong
Irvine (Los Angeles)	Dusseldorf		Kuala Lumpur
New York	Frankfurt		Mumbai
Silicon Valley	Glasgow		New Delhi
Toronto	London		Seoul
Sao Paolo	Madrid		Shanghai
	Milan		Singapore
	Moscow		Sydney
	Paris		Taiwan
	Prague		Tokyo
	Stockholm		
	Warsaw		

Table Key: Enterprise Ireland and IDA Ireland; Enterprise Ireland only; IDA Ireland only

Recommendations:

International Trading Relationships

- Proactively develop Ireland's trading relationships with new and emerging markets in a strategic way by:
 - Working to develop Ireland's double taxation agreement (DTA) network, ensuring that agreements are in place with existing and potential trading partners and that existing agreements do not impose barriers to growth; and
 - Reviewing and streamlining existing visa requirements and processes for Ireland and working to address the challenges arising from non-membership of the Schengen Agreement.

[Department of Enterprise, Trade and Innovation/ Department of Justice and Law Reform/ Department of Foreign Affairs/ Department of Finance/ Department of Tourism, Culture and Sport]

Marketing Ireland

- Develop and implement an overarching international marketing programme for Irish based enterprise such that:
 - Government Departments and Agencies²³⁶ communicate a cohesive and complementary suite of messages to market Ireland's enterprise strengths;
 - Enterprise trade missions etc. are coordinated to have the maximum impact and benefit for Ireland and Irish enterprise; and
 - Specific agency and sectoral branding initiatives complement and consolidate the overarching messages.

[Whole of Government: Department of Enterprise, Trade and Innovation/ Department of Foreign Affairs/Department of Agriculture, Fisheries and Food/ Department of Tourism, Culture and Sport/ IDA Ireland/ Enterprise Ireland/Shannon Development/ Bord Bia/ Tourism Ireland/ Culture Ireland]

Succeeding in International Markets

- Support Irish based enterprise to expand their international activities by:
 - Strengthening in-company training and development provision for international marketing, brand management, and sales, incorporating language and market specific modules;
 - Facilitating a language and market specific skills intermediary service through Enterprise Ireland which can be made available to companies as required; and
 - Enhancing the resources dedicated to Enterprise Ireland's *International Graduate Programme* which provides a structured work placement programme in internationally trading indigenous firms for undergraduates/postgraduates to enable them to develop relevant marketing, logistics and language skills.

[Department of Enterprise, Trade and Innovation/ Enterprise Ireland]

²³⁶ Including, Tourism Ireland, Bord Bia, IDA Ireland, Science Foundation Ireland, Enterprise Ireland

Growing the Contribution from the Indigenous Base

The indigenous sector contributes almost two thirds to total employment today. Exports by agency supported indigenous firms have grown, particularly in services activities, which have doubled between 2000 and 2008²³⁷. Internationalisation by indigenous firms through Outward Direct Investment (ODI)²³⁸ has also expanded and Ireland's stock of overseas investment increased almost six fold over the same period²³⁹. A number of Irish owned firms are multinationals with investments in global markets and internationally recognised brands (Kerry Foods, CRH, Ryanair), others have gained leading positions in niche markets (Iona, Quintiles) and many demonstrate high levels of innovation (Glanbia, Alimentary Health, daft.ie).

The nature of activities being undertaken by indigenous firms in general has evolved over the past decades, with many engaged in higher value activities, and employing people with higher levels of educational attainment.

FDI has been and will continue to be an integral part of Ireland's economic success. It plays a key role in stimulating the development of 'new' sectors in Ireland and in accelerating the achievement of critical mass within sectors. Investments in Ireland by 'known names' has a strong demonstration effect. At the same time, there is a contention that Ireland remains overly reliant on FDI in terms of its contribution to exports in particular. In addition, the nature of FDI being attracted to Ireland is changing, particularly in terms of its reduced employment intensity.

Given the changing dynamic within indigenous firms, and in the context of an increasingly competitive global environment for the attraction of FDI, a renewed focus on accelerating the growth potential of the indigenous base is timely.

The overall objective is to enhance the contribution of indigenous firms to Ireland's future economic growth²⁴⁰. In terms of exports, Enterprise Ireland's objective is to increase the value of indigenous exports by up to 33 percent over the period to 2015. The importance of entrepreneurship has been discussed in the earlier chapter on innovation. The focus here is on building scale and internationalisation capacity and capabilities.

²³⁷ Information and Communications Services exports averaged 10.4 percent growth over the period 2000-2008, and Business, Financial and Other services exports averaged 15.6 percent growth over the same period. *ABSEI 2008*, Forfás, 2010

²³⁸ ODI involves the establishment of a physical presence in overseas markets, either through green-field investment or through mergers and acquisitions. ODI delivers benefits both to the individual firm and to the economy as a whole in terms of increased innovation, productivity growth, repatriated profits, highly skilled and highly paid employment in headquarters operations, specialist sub-supply opportunities and management development through exposure to international trading best practice

²³⁹ Although some of this relates to Outward Direct Investment from foreign owned companies operating from Ireland. *World Investment Report 2009*, UNCTAD, 2009

²⁴⁰ The aim to grow the contribution from the indigenous sector should not be interpreted to mean that Ireland's current commitment to the foreign multinational sector is in any way diminished. FDI will continue to be an essential driver of economic growth, and a key source of technology transfer, expertise and R&D activity

Scaling Indigenous Firms

Despite the success of a number of Irish firms in global markets, the vast majority of Irish companies are relatively small (and certainly by international standards) and lack the human and financial resources, and perhaps ambition, needed to take on the challenge of internationalisation. Smaller firms also tend to be less innovation active than larger firms²⁴¹.

The challenge of reaching scale was highlighted in the Enterprise Strategy Group report *Ahead of the Curve*, 2004. In response to a recommendation to address this issue, Enterprise Ireland established its Scaling Division in 2005 to focus on assisting more client companies grow from the €5m+ turnover to €10m, €20m and €30m. Over the years, Enterprise Ireland has gained valuable insights into the issues facing firms as they aim to achieve scale, as well as the characteristics of those that have been more successful.

Highly proficient leadership, with ambition, vision and strong management teams, is fundamental if a firm is to identify and anticipate changing market dynamics and to fully understand its customer needs. The vast majority of exports and export-led employment by Irish owned firms is accounted for by companies which have invested in innovation and continuously adapt. Firms need to be cognisant of advances in technology, of competitor propositions, and of how they can differentiate in a highly competitive environment, building on their strengths. Capabilities to build and manage brands so that they are recognised (and appropriate) in overseas markets are critical. Firms need to be highly productive, flexible and responsive in addressing market opportunities. Successful firms actively participate in innovation networks and research groups to gain access to technology and new routes to market, and take a proactive approach to partnering to respond to larger scale tenders.

Enterprise Ireland assists client enterprises to build scale and to enhance their fitness to compete on international markets through supporting R&D capability, enhancing Leadership and Management Development, and leveraging the expertise and reach of Enterprise Ireland's international office network. Enterprise Ireland's overseas network provides in-market expertise in order to drive the growth in exports, through the creation of important networks of overseas buyers, suppliers, market advisers and other critical international linkages. Enterprise Ireland also supports international marketing and sales capability through development initiatives such as the International Selling Programme, and the new Market Research Programme.

Although some progress in scaling of Irish firms has been made, Enterprise Ireland's view is that the most impactful measure is that which is focused on developing leaders and highly effective managers that have vision and ambition. Strong leaders (with effective management teams) are instrumental in identifying opportunities; developing in-depth knowledge of their customers; understanding the importance, necessity and value of enhancing productivity; and investing in innovation and in skills development.

An expansion of the Leadership 4 Growth, Transform (management development) and Productivity support programmes in particular would accelerate growth in exports and international sales, and according to Enterprise Ireland, demand is greater than the resources available.

²⁴¹ *Community Innovation Survey 2006-2008*, CSO/ Forfás, 2009

Outward Direct Investment - Optimising Benefits

Outward Direct Investment (ODI) is an integral part of a company's global strategy. ODI by Irish companies has increased rapidly over the period between 2000 and 2008. In fact, ODI stock exceeded FDI stock for the first time ever in 2008 (€123.3 billion versus €120.9 billion respectively)²⁴².

ODI has benefits for the firm and for Ireland's economy. For the firm, in terms of enabling it to better serve local markets, to access lower-cost inputs, local knowledge, skills, expertise and/or technologies. For Ireland's economy, in terms of increased innovation, productivity growth, repatriated profits, highly skilled employment in headquarters operations and management development through exposure to international trading best practice²⁴³.

In the context of increasing ODI, those same factors that work to attract leading multinationals to locate in Ireland (such as the regulatory and tax regime), should be actively marketed to Irish owned companies so that they maintain core operations here as part of their internationalisation strategies and that the economic benefit to Ireland is optimised.

Mergers and Acquisitions - Opportunities and Implications

Mergers and Acquisitions (M&A) is a means for Irish companies to achieve scale and to access new markets. Enterprise Ireland currently offers limited soft supports to help companies develop the competencies to acquire companies overseas. This support is offered on the basis that M&A activity can strengthen the market position of the firm and can help embed the higher value activities of the firm in Ireland. Firms need to have the capabilities, and/or access to the relevant expertise to effectively manage the M&A process, through from identification of potential, to due diligence, and integration - involving strong product, market, financial and legal expertise and change management.

In the other direction, indigenous enterprises are being taken over by multinational companies aiming to provide a complete sub-supply solution to key customers in all markets. This presents both a challenge and an opportunity for Irish owned entities, particularly in the context of a policy objective to increase the scale and exports of indigenous firms²⁴⁴.

The Importance of Finance

Enterprise Ireland works closely with the banks, domestic and international VCs and other sources of financing to secure investment in scaling companies. The continuing efforts of the State in the area of Seed and Venture funds are especially important in ensuring a flow of venture equity into companies. The challenge is to build a sustainable VC industry in Ireland despite the current economic environment.

²⁴² Included in ODI stock is an element of investment by the FDI sector where companies grow their Irish capability and the Irish subsidiary is then involved in M&A activities on behalf of the parent company. These investments may be included in the ODI figure and may form a significant proportion of the overall ODI stock

²⁴³ *Statement on Outward Direct Investment*, Forfás, 2007

²⁴⁴ An acquired Irish firm can benefit from the support of a larger scale parent company and experience faster growth than would otherwise be the case. On the other hand, there is a risk that the knowledge base will be 'stripped' from the Irish entity or that it will be closed following acquisition

However, VC is the answer for only one segment of indigenous enterprise - companies require adequate levels of debt finance. In particular finance for working capital, trade finance, insurance and completion bonds are fundamental. Such funding is primarily provided by the private sector. In the current environment, firms cite difficulties in accessing adequate finance to invest effectively in order to improve the potential for growth (e.g. in innovation) and to fund the more lengthy sales cycle.

Recognising and Measuring Success

As firms look at alternative options to reach overseas markets - ranging from exporting from Ireland, to ODI and M&A - the focus on export growth alone as a measure of the success of indigenous firms is no longer adequate. The full value of international sales is not always acknowledged, and there is no mechanism to identify the quantitative economic returns, or positive qualitative impacts arising.

A more in-depth review would be of value to identify *specific* objectives and to identify the most appropriate measures of success. Such measures would look beyond indigenous firms' export growth and contribution to overall exports to include quantitative and qualitative benefits of internationalisation, ranging from international sales, overseas employment, return to the Irish economy, reputation effects etc. Aligned with this, a more in-depth understanding of the potential and implications of M&A; the characteristics of successful companies that have reached scale (including those outside of the agency client base); and the most effective mechanisms of support (including soft supports) in terms of achieving objectives and value for money, would considerably enhance the potential for internationalisation of the indigenous base.

Recommendation:

Build on the success of Enterprise Ireland's Leadership 4 Growth (L4G) programme in enhancing management capacity by:

- Developing additional programmes which expose senior executives operating from Ireland to best practice, case studies and personal face-to-face contact with the executives and founders of successful innovative companies.
- Placing an immediate focus on developing the skill sets and experience of CFOs and CEOs, in the area of raising international finance from Ireland to scale companies.

[Department of Enterprise, Trade and Innovation/ Enterprise Ireland]

Recommendations have been identified throughout this report that contribute toward supporting and accelerating the growth of indigenous firms, particularly those aimed at:

- Expanding to new and emerging markets.
- Using government procurement in a strategic way to stimulate innovation (especially in relation to its value as a reference site).
- Continuing supports for R&D and innovation at firm level and for enhancing the IP environment and commercialisation.
- Enhanced Agency collaborative approaches to driving the development of sectors.
- Facilitating networks and alliances, particularly if it stimulates linkages between foreign and indigenous firms.
- Improving access to finance.
- Stimulating investment in enterprise (BES/SCS/Seed funding).

8 Short-term Measures

This report recommends the specific actions that Government needs to take now to provide a supportive environment for business, complemented by direct firm level interventions. While confident that the measures identified in this report will provide the basis for a return to sustainable economic growth and job creation, there is also a need to address specific issues that have arisen as a direct result of the current economic downturn.

Labour Activation and Up-skilling

The scale of unemployment poses a significant challenge for individuals and for Government. Although there is a degree of mobility within the labour market, it will take time before levels of unemployment will be appreciably reduced. Many jobs lost in low value added sectors such as high volume manufacturing and construction are unlikely to return to pre-recession levels and therefore there is an oversupply of people with skills related to those sectors.

Without immediate action to address this skills mismatch, there is heightened risk of significant levels of long-term unemployment and disengagement from the labour force. The focus for the short-term must be to implement tailored interventions in the areas of activation and up-skilling, targeting particular cohorts of the unemployed to enhance their employability, and minimise the drift into long-term and very long-term unemployment.

A significant number of initiatives have already been introduced since 2009. They range from short-term sector specific training programmes, to additional post-Leaving Certificate places, to work placement programmes. Supports aimed at sustaining existing employment are also in place (Appendix VI).

In the design of new interventions, the conclusions of the *Review of Labour Market Programmes* should be taken into account. It concludes that optimal labour market programmes are those that are demand-led, based on employer and employee identified training needs and aligned with national labour market policy objectives. Where appropriate, programmes should be accredited. This, together with a focus on training for results, should be reflected in all future interventions²⁴⁵.

Understanding the profile of those who are currently unemployed is an essential part of delivering appropriate activation programmes in order to (i) direct where intervention is required and (ii) how measures can be best designed to ensure a long-term benefit to participants. Building upon recent analysis of the live register²⁴⁶, the Government has identified four cohorts of the unemployed to be prioritised with respect to access to relevant State services including guidance, education, training and work experience support services. The four cohorts are as follows:

- People with low skills or education levels, i.e. unemployed people who do not have a Leaving Certificate qualification or equivalent;
- People who are on the Live Register for long periods (over one year);
- People who are under 35 years of age; and

²⁴⁵ *Review of Labour Market Programmes*, DETE/ Forfás, 2010

²⁴⁶ This is based on *Profile of Employment and Unemployment*, Forfás, 2010

- People who were previously employed in sectors that have been most affected by restructuring and where employment is not expected to return to pre-recession levels in the short to medium-term (mainly construction, manufacturing and wholesale/retail trade).

Work placements for graduates and school leavers are an important component of labour activation programmes. They enable individuals to gain early exposure to the work-place and on-the-job skills development to complement their education. Work placements can also benefit companies - particularly if new expertise and/or knowledge are introduced to the firm. There are indications of barriers limiting uptake of current programmes, including:

- The lack of accreditation;
- The imposition of additional costs (such as travel costs) on participants; and
- Uncertainty relating to social welfare entitlements as a result of participation.

In order to expand the use of work placements these barriers should be addressed in so far as possible as a matter of priority.

It is important to be realistic about what can be achieved taking into account the challenges from the perspective of the employer. There is genuine difficulty in identifying appropriate placement opportunities at a time of limited demand when full time employees are either being made redundant or having their hours reduced.

Recommendation:

- Ensure that labour activation programmes aimed at enhancing the employability of the unemployed are designed to deliver enterprise relevant outcomes and increased productivity as set out in Forfás and EGFSN reports.

Expand the existing Work Placement Programmes for graduates (1,000 places) and school leavers (1,000 places) which provide work experience for up to 9 months and allow participants to retain their social welfare entitlements where they are unpaid. In order to ensure the success of the programme, barriers which limit participation and which discourage enterprises from providing placement opportunities should be removed.

[Department of Enterprise, Trade and Innovation/ Department of Social Protection/
Department of Education and Skills]

Access to Finance - The Challenge for Firms

Firms cite access to, and cost of, finance as the most significant issue facing them today. This acts as a constraint as firms attempt not only to weather the recession, but also as they prepare for the upturn by investing in management development, productivity improvements and /or innovation as envisaged in this report. Targeting new overseas market opportunities has an even greater demand on cash flow.

Restricted access to finance exerts downward pressure on economic growth and it is widely acknowledged that ensuring an adequate supply of funding to viable Irish businesses is a prerequisite for economic recovery²⁴⁷.

The Government has intervened to address the difficulties arising from the economic and financial crisis and to facilitate the flow of credit to the wider economy²⁴⁸. Additionally, a number of measures have been introduced to enhance access to finance for viable enterprises through the banking system and directly through State supports (e.g. the bank recapitalisation scheme; the establishment of a Credit Review Office, and a reduction in the payment period by Central Government Departments to their business suppliers from 30 to 15 calendar days²⁴⁹).

The area of access to finance is under constant review by DETI and the enterprise development agencies in consultation with the business community, and work is ongoing to develop appropriate measures in conjunction with the Department of Finance.

Despite some progress there are indications of ongoing market failure in the availability of credit for certain categories of firms, especially SMEs, which has been exacerbated by the current financial crisis. These categories relate to firms who can demonstrate commercial viability yet fail to obtain loans because of issues arising during the risk management phase of the lending decision.

Based on international experience, a targeted SME Credit Initiative can facilitate access to credit for SMEs in these circumstances and is appropriate where the lender would be prepared to offer the facilities if the exposure on default could be shared with the State. It is not intended that an SME Credit Initiative should be a substitute for commercial bank lending nor should it facilitate credit for unviable companies. It would, however, place Irish firms on a more level footing with international competitors.

Recommendations:

- Continue to advocate for an appropriate risk sharing Credit Initiative in the context of enhancing access to finance for commercially viable SMEs.

[Department of Enterprise, Trade and Innovation/ Department of Finance]

- Extend the voluntary 15 day rule relating to prompt payments to the HSE, Local Authorities and State Agencies which would have an immediate and positive impact on cash flow for suppliers.

[Department of Finance/ Whole of Government]

²⁴⁷ Recent European Central Bank (ECB) studies indicate that changes in the supply of credit, both in terms of volume and credit standards applied on loans to enterprise, have significant effects on real economic activity. *Do bank loans and credit standards have an effect on output*, ECB Working Paper No 1150, European Central Bank, 2010

²⁴⁸ These measures include the establishment of the National Asset Management Agency (NAMA), extension of the bank guarantee for borrowers with deposits of up to €100,000 and restructuring of the Central Bank and the Financial Regulator

²⁴⁹ In relation to prompt payments there remains a need for public bodies who are procuring goods and services to enter fully into the spirit of existing regulations for payments within 30 calendar days

9 Implementation

A Whole of Government Response

With the exception of public sector employment, the Government itself does not directly create jobs. It does, however, have a key role to play in delivering the optimum environment for business to establish, grow and thrive, and one that is appropriate for all firms whether trading internationally or domestically.

The recommendations in this report reflect the priority actions required to create that environment, complemented by targeted firm level interventions (where appropriate). The agenda extends beyond the direct remit of DETI, and involves a range of Government Departments. It requires a whole of government response, with DETI as the governmental advocate for enterprise.

A mechanism for driving and monitoring implementation and to coordinate the actions of the relevant Government departments (e.g. Tourism, Agriculture, Education, Transport) will need to be put in place²⁵⁰. The scale of the challenge requires that Government acts quickly and decisively to make the necessary changes in order that the potential of enterprise to drive economic recovery and job creation is fully realised.

Role of the Enterprise Development Agencies in Implementation

At the operational level, the enterprise development agencies, namely: IDA Ireland, Enterprise Ireland, the County Enterprise Boards and Science Foundation Ireland are responsible for enterprise promotion²⁵¹. They each have a core area of focus, which enables them to build a depth of relevant expertise and understanding of the enterprise cohort for which they are responsible, and to focus their own resources to best effect²⁵².

The enterprise agencies are operating within a wider business environment which has a strong bearing on the ultimate performance of enterprises and on the impact of firm level interventions. For instance:

- Currently, the single most important issue for the Enterprise Ireland client base is access to finance. Without an improvement in this situation, the range of instruments available to Enterprise Ireland is likely to have a reduced impact.
- Maintaining relative cost competitiveness and restoring and consolidating Ireland's international reputation are fundamental to the future success in attracting FDI.

²⁵⁰ The Cabinet Committee and Senior Official's Group on economic renewal is in place and would be the appropriate mechanism

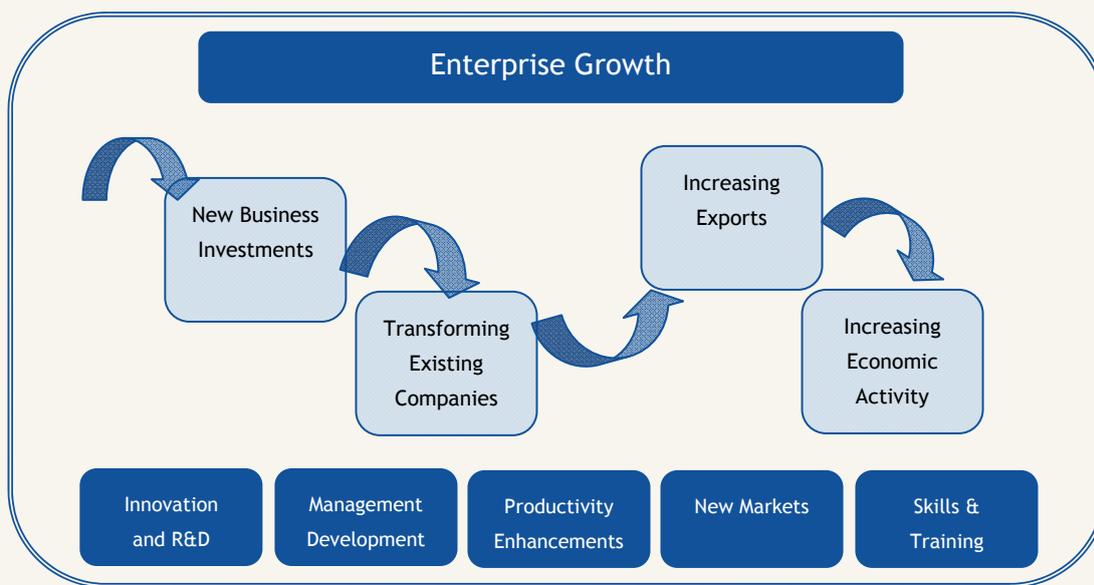
²⁵¹ While the enterprise agencies under the remit of DETI engage directly with a wide base of firms, certain segments of the enterprise base are either fully or partially serviced by a number of other bodies across different government departments (e.g. Fáilte Ireland, Marine Institute, Teagasc, Irish Film Board, Bord Bia, Bord Iascaigh Mhara, Údarás na Gaeltachta)

²⁵² The agencies operate within the legislative context of the *Industrial Development Acts* and State Aid rules. The ownership and scale of a company determines the agency from which the company will receive enterprise supports. The CEBs can also provide support to micro enterprises who are focused on local markets (Appendix VII)

- Continuity in the Government’s commitment to invest in Ireland’s knowledge and research capabilities is critical to the realisation of SFI’s strategic objectives.

The focus of the enterprise agencies is broadly aligned with the strategic vision set out in this report, although there are some areas where interventions need to intensify in order to deliver on the critical success factors.

Figure 11: The Role of the Enterprise Agencies in Supporting Enterprise Development



Building on Sectoral Strengths and Realising Potential in New Activities

This report has underlined the importance of realising potential for growth and job creation across *all* sectors and activities, recognising that sectors contribute differently and have different needs depending on stage of maturity, development and objectives. The fact that the nature of sectors is a constantly shifting dynamic has been highlighted - informed primarily by global trends. New global and domestic opportunities and challenges arise on an ongoing basis. Through their in-depth understanding of sectors, strong relationships with client companies and in-market intelligence, the enterprise development agencies are well positioned to identify opportunities and obstacles to growth at an early stage.

The agencies are actively seeking to develop a broader geographical footprint for exports, ODI and FDI. They will better exploit synergies across their activities in this regard. Specifically, the agencies (including those outside of DETI’s remit - e.g. Bord Bia, Tourism Ireland) can further exploit Trade Missions and other in-market activities to communicate a cohesive and complementary suite of messages conveying Ireland’s enterprise strengths. In addition, more can be achieved in underpinning agency activities in the marketplace through enhanced coordination of strategies for markets and sectors and the effective use of resources.

Supporting Competitiveness at Firm Level

In the main, the priorities for action to enhance innovation, productivity and cost competitiveness focus on business environment barriers and enablers - in infrastructure, education and skills development, the regulatory environment, the IP framework and

continuing to develop the research and development base. The enterprise development agencies provide direct supports at firm level - the nature and extent of which is informed by aspects such as market focus, maturity and stage of development of the sector and indeed, the capabilities and objectives of individual firms within sectors. The impact of the firm level supports delivered by the enterprise development agencies will be greatly enhanced through achieving progress with regard to the broader business environment factors.

In some instances, it is recommended that certain supports be extended and/or enhanced to accelerate growth and deliver on the critical success factors. Enterprise Ireland and IDA Ireland will continue to encourage companies to embrace R&D and innovation by providing direct financial supports and stimulating collaboration with research institutes. They will also extend their supports for productivity enhancing initiatives, in-company training and management development, and where appropriate, capital investment. Enterprise Ireland will continue its efforts to enhance availability of early stage seed and venture capital for innovative start-up companies.

Enhanced Agency Collaboration

The enterprise agencies already collaborate extensively through a range of formal and informal mechanisms. However, the changing and complex business environment is demanding that they are more proactive about strategic collaboration. In 2009, DETI established a High Level Group consisting of representatives of each of the enterprise agencies under its remit to identify areas for enhanced collaboration and to drive a focused agenda²⁵³.

Progress has already been made in a number of areas, for example: in ensuring, where possible, that access to supports is defined by business need rather than agency ‘ownership’; enhanced information sharing; and sector specific initiatives to maximise potential synergies between foreign and indigenous firms, and between large and small firms. A proactive approach to agency collaboration will continue and will deliver enhanced client services and increased efficiencies.

Recommendation:

Further enhance inter-agency collaboration with a focus on:

- Provision of a seamless service to enterprise irrespective of firm size or ownership (indigenous/foreign);
- The development of sectors;
- Sharing of information (markets/sectors/research/economic) in a timely and systemised way to ensure that the enterprise development agencies are best placed to support the needs of enterprise; and
- Communicating a common set of messages regarding Irish enterprise and the broader business environment nationally and internationally.

[Department of Enterprise, Trade and Innovation/ Forfás/ IDA Ireland/ Enterprise Ireland/ Science Foundation Ireland/ Shannon Development/ Údarás na Gaeltachta]

²⁵³ Údarás na Gaeltachta was also a participant

Agency Supported Firms

The companies supported by the enterprise agencies occupy a critical place in Ireland's economic performance, in that the value of agency supported firms to the Irish economy extends beyond their immediate employment effects²⁵⁴. They contribute greatly to the country's turnover, employment, exports, domestic economy and tax. Agency assisted enterprises employed over 300,000 people in 2009²⁵⁵. Through indirect impacts, the enterprise agencies support between 0.7 and 0.99 additional services jobs, for every person directly employed by their client companies²⁵⁶. Agency supported enterprises also accounted for approximately 80 percent of total exports, and 38 percent of national GVA in 2008²⁵⁷.

Agency assisted companies are a very productive part of the economy with average GVA per employee of €235,000, compared to a national average of €75,700²⁵⁸. These enterprises also contribute greatly to the domestic Irish economy having contributed almost €40 billion in 2008 through payroll, materials and services costs²⁵⁹. In addition, agency assisted clients accounted for approximately 63 percent of total corporation tax for 2008; this is estimated to rise to 78 percent in 2009²⁶⁰.

The constant evolution of the agency client base ensures that the enterprise base is continually renewed, which is critical to sustaining and growing productive employment. Over the past decade, and against a background of deterioration in national competitiveness, the share of high value added manufacturing and internationally traded services in agency supported employment increased from 62 percent in 2000 to 75 percent in 2009. Productivity growth was twice the national average over the same period, and the number of R&D active firms has grown. During the recent recession, most of the job losses in internationally trading firms resulted from a restructuring of operations rather than closures. These firms continue to trade from Ireland and should be better positioned for employment growth as the world economy recovers.

Evaluation

Evidence based policy development relies heavily on appropriate, timely and robust policy evaluation. *“Evaluation is a key decision support tool providing policy makers with a better understanding of policy results, allowing learning from past experiences, providing elements for improving strategy definition, increasing the efficiency and efficacy of policy intervention, and demonstrating the impacts of intervention. All these elements help to improve the transparency and accountability demanded on the policy making process”*²⁶¹. Both ex-ante and ex-post evaluations are important in the development of future enterprise policy.

²⁵⁴ Referring specifically to the Enterprise Ireland and IDA Ireland client portfolios

²⁵⁵ *Annual Employment Survey 2009*, Forfás, 2010

²⁵⁶ Forfás calculations, unpublished

²⁵⁷ *ABSEI 2008*, Forfás, 2010; and *National Income and Expenditure Tables*, CSO - GVA at Factor Cost, 2008

²⁵⁸ *ABSEI 2008*, Forfás, 2010; *Annual Employment Survey 2009*, Forfás, 2010; *National Income and Expenditure and QNHS*, CSO

²⁵⁹ *ABSEI 2008*, Forfás, 2010

²⁶⁰ Forfás estimates, unpublished

²⁶¹ *RTD-Evaluation Toolbox: Assessing the Socio-Economic Impact of RTD-Policies*, European Commission Joint Research Centre, 2002

It is fundamental that DETI's resources are utilised to best effect and that appropriate evaluation mechanisms exist to facilitate monitoring on an ongoing basis. This is an essential measure in order to ensure that:

- Policy aims are achieved in the context of reduced public resources;
- Supports are appropriate to a fundamentally altered enterprise environment; and
- Policy tools employed across the enterprise system are cohesive and complementary.

A strong evaluation framework is required that will provide a common basis for evaluation within enterprise programme areas, a regular systemised approach, and allow for optimum coherence and comparability across evaluation outcomes.

Recommendation:

Develop and implement a system wide evaluation framework (incorporating enterprise policy, programme and project elements). The framework will be designed to measure ex-ante and ex-post the appropriateness, effectiveness and efficiency of policy objectives/delivery.

The programme evaluations should ensure that the programmes managed by the enterprise development agencies operating under DETI's remit deliver on defined objectives, and that they are efficiently and effectively delivered. As a priority at least one programme evaluation should be carried out by mid 2011.

[Department of Enterprise, Trade and Innovation]

Conclusion

This review of enterprise policy provides a clear agenda for action, set against the current economic context and cognisant of global trends, with the overriding objective of delivering enterprise driven economic growth and employment creation.

A whole of government response is required, with DETI as the principal government advocate for the enterprise sector, in order to deliver on the ambitious forecasts for growth and employment²⁶².

It may take time for the impact of some of the recommendations to be fully realised, but the time to start addressing them is now.

²⁶² It also assumes that corrective action is effective in addressing the fundamental domestic issues underlying the ESRI forecasts

Section B

Overview of Sectors

Sectoral Overviews

This section provides a more detailed overview of each of the individual sectors categorised in Chapter 7. The overviews detail each of the sectors' current performance in Ireland, and highlight opportunities and challenges in light of global trends and sectoral developments.

Building on Strengths and Convergence	Emerging Opportunities and Untapped Potential	A Renewed Focus on Mature Sectors
ICT	Green Technologies	Tourism and Hospitality
Health LifeSciences ²⁶³	Marine and Maritime	Retail and Wholesale
International Financial Services	Creative Industries	Construction
Agri-Food	Education Services	Transport, Logistics and Distribution
Other Internationally Traded Activities		

What is evident is that *all* sectors are evolving and that the four critical success factors apply across the entire enterprise base. Firms need to embrace innovation, enhance productivity and improve cost efficiencies if they are to compete effectively on domestic or international markets. What is also evident is that there are niche high growth opportunities within all sectors - enabled by scientific and technological advances and reduced barriers to trade - enhancing Ireland's potential to strengthen its enterprise mix.

The recommendations presented in earlier chapters are directed at improving the business environment such that all firms can thrive, and at developing capability at firm level. As such they are not specific to any *individual* sector.

The analysis that follows indicates the need in some instances for *supplementary* action to address barriers to growth and/or accelerate growth specific to an individual sector and these have been outlined (where relevant). The Expert Group on Future Skills Needs has published a number of reports that outline the needs, supply and demand for skills at an individual sectoral level (Appendix IV).

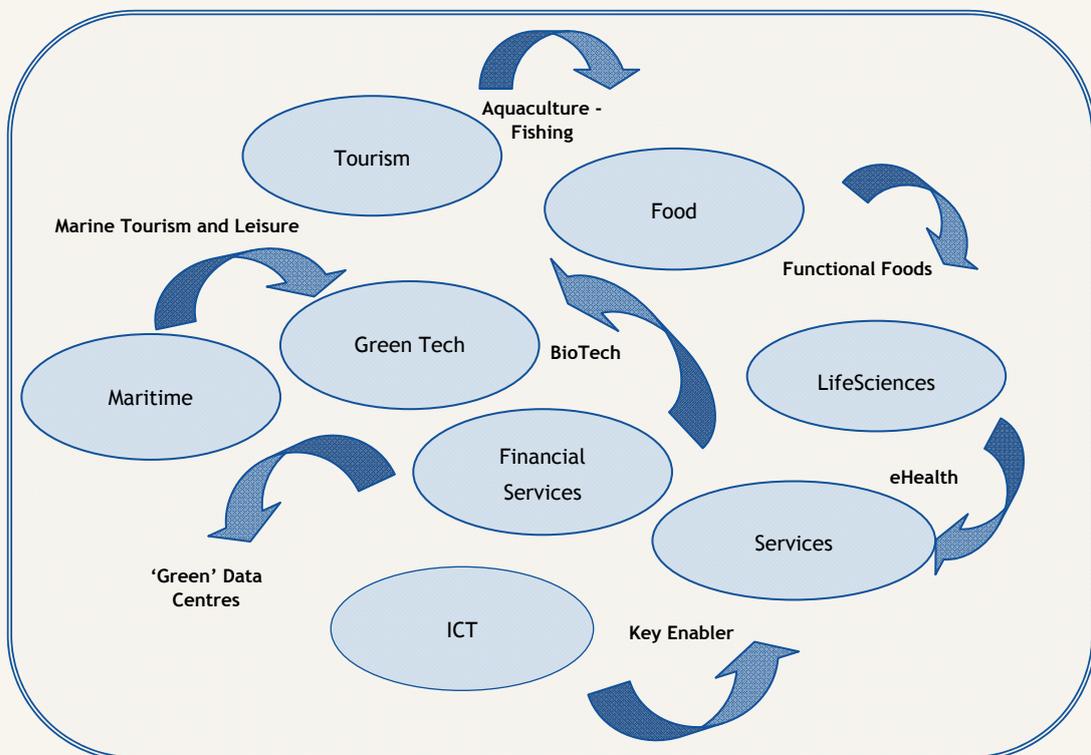
²⁶³ Although categorised as an emerging opportunity for Ireland within the body of the report, Healthcare Services are considered alongside Health LifeSciences in this section because of the complementarity and strong inter-play between them

Building on Strengths and Convergence

Convergence

Increasing advances in science and technology has blurred the traditional lines between a number of formerly discrete sectors. Convergence is a broad concept which can occur both within sectors and across sectors; it presents new opportunities - not only for high technology sectors but also for many of the more traditional sectors. Developments in convergence will primarily stem from the firm and require receptiveness to partnerships, alliances, new business models and open innovation. In reality, the opportunities are boundless - and a business environment that is conducive to facilitating alliances, networks and collaborations will allow for 'ground up' initiatives to evolve.

Figure 12: Convergence - A Blurring of Sectors



Many countries have highlighted the potential arising from convergence, although in general, policy developments are relatively under-developed. By identifying specific areas of focus, the enterprise development agencies can ensure a cohesive and coordinated approach to accelerate the realisation of potential and to provide early demonstration models that will, in turn, position Ireland to the forefront of convergence developments internationally. Ireland's small scale and ability to mobilise the range of actors involved in the convergence process is a distinct advantage.

The main section of this report highlighted policy areas of relevance to convergence; the recommendations relating to facilitating networks and alliances, enhanced agency collaboration, and the public procurement flagship initiative are pertinent in this regard, as is an anticipatory and proactive approach to regulation and a strong IP framework.

Engineering

Traditionally engineering had been reviewed as a distinct engineering ‘sector’ which was primarily equated with manufacturing, predominately in automotive, metal fabrication and other equipment and machinery manufacturing. A cohort of highly innovative engineering firms continues to perform well in Ireland’s economy.

However, it is now more appropriate to define engineering as a competence that impacts a much broader range of sectors in Ireland, including convergent sectors. The potential for engineering has therefore been reflected across the sectoral reviews in this section, including LifeSciences and other manufacturing sectors, clean tech and construction sectors.

Across a diverse range of sectors, upwards of 70,000 people (or about 3.6 percent of the workforce) are engaged in professional and technical engineering occupations; including close to 26,000 in mechanical, electronic, electrical and chemical engineering, more than 33,000 in craft related areas such as metal work and moulding, and a further 11,000 in architectural and civil engineering roles*.

* Source: *National Skills Bulletin 2010*, EGFSN, 2010 (based on CSO data)

Information and Communications Technologies

The Information and Communications Technologies (ICT) sector (incorporating hardware manufacturing and software) is the world’s fastest growing industry, with global revenues in excess of \$3 trillion²⁶⁴.

The sector in Ireland employs approximately 54,000 and contributes €30.3 billion to exports²⁶⁵. It comprises both leading multinationals and a large number of Irish owned firms, a number of which have gained leading positions in niche markets providing tailored software for the financial services, healthcare, education and entertainment sectors. Over the past decade activity has increasingly shifted toward software and services - although hardware manufacturing firms continue to contribute significantly to Ireland’s economy. The reputational impact of the sector internationally is considerable - stimulating increased awareness of Ireland’s attractiveness as a location for further ICT related business investment.

Taking into consideration global trends and Ireland’s existing enterprise and research base, opportunities exist:

- To develop Ireland as a centre of excellence for software engineering and development in high growth areas such as telecommunications (including mobile), natural language programming, and financial services - in this context it is important to address outstanding issues arising from royalty income earned in overseas markets;
- To take advantage of the shift toward ‘software-as-a-service’ and increased demand for hosted/managed services, such as electronic records and information management

²⁶⁴ *Global Information Technology Report 2009 - 2010*, World Economic Forum, 2010

²⁶⁵ *Quarterly National Household Survey*, CSO, Q4, 2009; *External Trade*, CSO, 2010; and *Balance of International Payments*, CSO, 2010. The Communications Sector is not included here. Since the privatisation of the networks, Ireland is now served by a number of infrastructure and telecoms service providers employing 37,000 people

systems services and supporting data management infrastructures (including green data centres and cloud computing)²⁶⁶;

- For niche equipment manufacturing in low and medium volumes, particularly for Intellectual Property sensitive products;
- To proactively expand into the non-OECD markets, which make up over 20 percent of the global ICT market²⁶⁷; and
- To play a central role in driving opportunities arising from convergence.

*Broadband - pervasive,
resilient and cost effective
- A fundamental
requirement for ICTs*

*A New Software Economy -
means increased
collaboration, networking
and partnerships*

Ireland's strength in software development to date has been largely based on domain expertise and technical capability. Over the next few years, with the emergence of new business models and IT delivery systems, product management capability and marketing will become more critical. The rapid pace of change means that the development of innovative products and services is fundamental to the success of ICT firms. Companies will increasingly differentiate themselves by taking a more creative approach to new business and revenue models and embracing open innovation.

In this context, there is scope to further enhance relationships between companies in this sector and the ICT research centres within the HEIs in Ireland - a number of which are international leaders in developing and adapting new technologies such as the Semantic Web and sensor technology.

New approaches to customer relationship management and strong capabilities in relationship building, partnering and collaboration will be particularly important for firms and their management teams²⁶⁸. The sector requires a high level of specialised technical skills in areas such as programming, electronic engineering and design. The report of the EGFSN on the ICT sector identifies the actions necessary to ensure availability the appropriate skillsets. If the sector in Ireland is to continue to grow and develop, it is essential that progress on these actions is maintained and augmented²⁶⁹.

ICT Impacts All Sectors: ICT has a pervasive impact across all sectors, for example, enabling innovation, productivity enhancements and greater customer and market reach. The application of ICTs can 'refresh' traditional sectors and can drive increased productivity. It can change the way services are delivered (elearning, remote healthcare and diagnostics, simulation, virtual reality in architecture and design). It can also provide opportunities for new converged products and customised digital content. ICT also enables the monitoring of large scale phenomena such as energy consumption, pollution, weather and global warming.

²⁶⁶ 'Cloud Computing' represents a scalable, self-service delivery model where processing, storage, networking and applications can be accessed as services over the Internet

²⁶⁷ ICT spending in Brazil, China, India, Indonesia and Russia grew by more than 20 percent per annum between 2003 and 2007. *The Impact of the crisis on ICT and ICT-related employment*, OECD, 2009

²⁶⁸ *Best Connected: Software from Ireland, A Strategy for Development of the Indigenous Software Industry 2009-2013*, Enterprise Ireland, 2009

²⁶⁹ *Future Requirement for High Level ICT Skills in the ICT Sector*, EGFSN, 2008

In more recent years, Web 2.0 and social networking are having a transformative impact on how all businesses communicate with their customer base, business partners and internally within the company. Communications tools such as blogs, wikis and widgets are becoming more commonplace within businesses with the objective of increasing productivity and fostering innovation, and supporting collaboration. The potential for ‘micro apps’ has driven innovation and new revenue streams for firms of all sizes²⁷⁰. The emergence of ‘cloud computing’ also presents opportunities for companies to improve employee productivity, accelerate the deployment of new products and services and to reduce operating costs²⁷¹.

In general, although progress has been made, it is apparent that Ireland’s enterprise base, home users and the public sector (through eGovernment initiatives) have not embraced ICTs to an extent reflective of the strength of the industry here. This may be explained in part by the fact that, initially, the major multinational ICT firms here were involved primarily in manufacturing and serving export markets. The lack of pervasive availability of competitively priced, high speed broadband networks has also been a contributing factor. Whatever the explanation, even though the sector itself has moved on considerably over the past decade - Ireland as an early adopter has not. This indicates significant untapped growth potential across the economy.

Recommendation:

If Ireland is to position itself as a centre of excellence for software engineering and development, it needs to ensure that its corporate tax system remains internationally competitive. In this context, software firms have highlighted a disadvantage relating to taxation of royalties. It is recommended that:

- A system of pooling for royalties is implemented which would allow companies to offset the excess credits incurred in respect of royalty tax withheld in one country against the net Irish tax payable in respect of royalties earned in another country.

[Department of Finance]

Health LifeSciences

The Health LifeSciences sector is a \$1.2 trillion industry globally that will continue to grow at rates between three percent and nine percent (depending on the sub-segment) to reach more than \$1.5 trillion in 2013²⁷². The sector is benefiting from unprecedented global opportunities driven by a combination of factors, including advances in science and technology, ageing populations, increasing consumer wealth, and convergence. While the potential for growth is substantial, there are also a number of challenges facing the sector globally - some of which are more pertinent or immediate to certain subsectors:

²⁷⁰ A micro-app is an application that sources very specific content from at least one external (or internal) source and manipulates the information to display it in a new or inventive way - <http://www.tippingpointlabs.com>

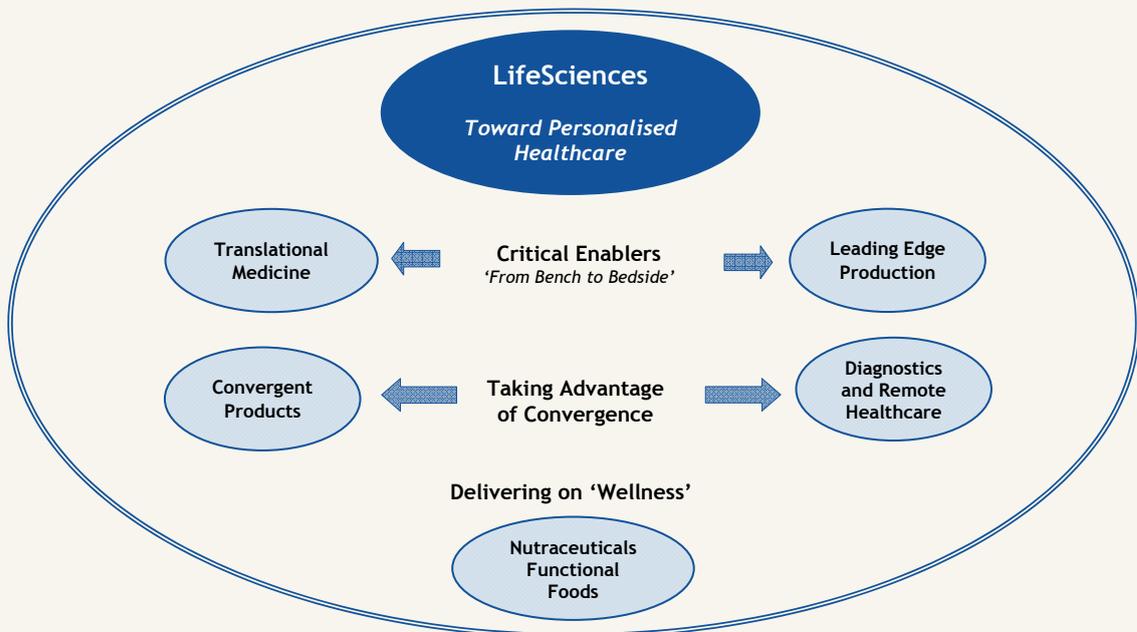
²⁷¹ Including, for example, development and test, virtual desktop, collaboration and analytics

²⁷² *Global Pharmaceuticals, Biotechnology & Life Sciences: Industry Profile; and Global Health Care Equipment & Supplies: Industry Profile*, Datamonitor, 2009

- The critical issue facing pharmaceutical firms worldwide relates to the impending expiry of patents, global over-capacity, significant R&D costs and a low pipeline for new products;
- The manufacturing environment for biopharmaceuticals and nutraceuticals is highly complex;
- Medical device firms face the inherently contradictory forces of downward cost pressures and the need to innovate to bring new products and services to markets. Access to EU markets is particularly complex because of inconsistencies in standards, criteria and procurement processes in each country.

Ireland has a strong international reputation in Health LifeSciences, based on: manufacturing expertise - underpinned by core engineering skills, a renowned regulatory track record, a supportive fiscal regime, and recognised world class expertise in designing and constructing state-of-the-art manufacturing facilities. This has been enhanced by increased engagement by Irish based firms in R&D - supported by public investments in related basic and applied research initiatives. The sector occupies a key place in Ireland’s economy, employing more than 52,000 people and generating €44.4 billion in exports in 2008²⁷³. The sector tends to be relatively resilient to economic downturns and has continued to perform strongly here despite the current recession. It is also characterised, however, by intense international competition together with increasing downward cost pressures and demand for increasingly higher levels of productivity, along with the utmost need to ensure quality and patient safety. As such, it is essential that the enterprise development agencies and other stakeholders continue to work to enhance the innovative capacity of the sector in Ireland.

*Health LifeSciences in Ireland - An Enterprise Outlook*²⁷⁴ highlights a number of growth opportunity areas based on Ireland’s existing strengths, growing R&D capacity and global trends.



²⁷³ *Health LifeSciences in Ireland - An Enterprise Outlook*, Forfás, 2009

²⁷⁴ *Ibid.*

Convergent products:	Taking advantage of convergence between sub-sectors and between life sciences and others to realise opportunities (e.g. drug eluting stents ²⁷⁵).
Diagnostics and Remote Healthcare:	Harnessing the capabilities of firms involved in a range of sectors/activities including diagnostics, medical devices, sensors and ICT.
Delivering on Wellness:	Promoting increased engagement by food and pharma companies in the areas of functional foods and nutraceuticals ²⁷⁶ .

Of critical importance is the need to build on Ireland's reputation for manufacturing excellence and a strong regulatory environment. Continuous improvement within manufacturing, embracing lean principles, underpinned by relevant skills in process and quality technologies, is fundamental to future success. Superior capability in the core skills of mathematics and analytics, physical sciences, electronics and engineering are critical to the sector. This needs to be complemented with inter-disciplinary skills, together with flexible approaches appropriate to the delivery of smaller batch sizes and product variations in multi-product manufacturing facilities²⁷⁷.

Effective collaboration across industry, health sector and academia is critical

Embracing leading edge production processes essential to build on manufacturing reputation

Complementing Manufacturing Strengths with R&D and Innovation is the way forward

Biobank infrastructures essential

Clinical trials infrastructures and ethics committee processes must be addressed

There is a need to forge tighter links between manufacturing and R&D activities and to build a supportive environment for pilot and early stage production, enabling more effective translation of LifeSciences R&D into commercialised products and services.

Firms acknowledge the imperative to innovate and are increasingly involved in R&D activities through from discovery (primarily small scale indigenous bio companies), to product development (primarily medical devices), and process development (primarily pharmaceuticals). Ireland's investments in R&D in areas directly relevant to LifeSciences serve the sector well as it seeks to complement production with more innovative and research intensive activities.

Scientific and technological advances are enabling the shift toward personalised healthcare that embraces research, diagnostics and testing, delivery mechanisms, devices and services, and the concept of providing treatments in the appropriate way, to the appropriate patient, at the appropriate time. Although it may be some time before the concept of individualised treatments is fully realised, there is already evidence of innovative solutions to address

²⁷⁵ A coronary stent placed into narrowed, diseased coronary arteries that slowly releases a drug to block cell proliferation

²⁷⁶ For example cholesterol reducing products

²⁷⁷ Report of the High Level Group on Manufacturing, DETE / Forfás, 2008

cohorts of populations with common genetic dispositions²⁷⁸. The interconnection between firms, the hospital system and academic researchers nationally (and internationally) is vital, although it is undeveloped and fragmented today.

Irish based firms cite considerable challenges to effective engagement in RD&I, relating to ethics committee processes, inconsistency in patient records management and IP negotiations.

A directly relevant development is the proposed Health Information Bill²⁷⁹. The main aim of the Bill is to establish a legislative framework to facilitate the use of information and information technologies to enhance medical care and patient safety and improve service delivery. Within this context, a key consideration is that the Bill should allow for the introduction of a Unique Health Identifier (UHI) for patients, which would allow for up-to-date patient clinical data to be collated, stored and accessed as appropriate, along with strict guidelines for safeguarding patient confidentiality and for enabling the research community to access information on an aggregated basis. The Bill also represents an opportunity to address the need for consolidation of existing ethics approval committees for clinical research.

The volume of M&A activity within Health LifeSciences globally has implications when mergers occur between companies that have subsidiaries based in Ireland, and against a backdrop of global overcapacity in production facilities, relatively high costs of doing business and expiring patents. A key challenge will be to continue to ensure that foreign manufacturing companies based in Ireland reposition themselves within the context of their parent company strategies, and for Ireland to provide the supportive business environment to enable them to do so effectively.

The recently established industry-led LifeSciences Alliance and the existing Health Research Group will play a strong role in influencing the changes needed to drive future growth in the sector. Opportunities arising from increased interconnectivity between the healthcare system and medical technologies in particular will be a key focus for the future, and are considered in greater detail in the section on healthcare services.

(Recommendations relating to the Health LifeSciences are included after the section on Healthcare Services below)

Healthcare Services

Healthcare services are primarily provided by the public sector in Ireland and are a significant employer with more than 235,000 healthcare professionals and related support personnel²⁸⁰. The most noteworthy development in recent years is that private provision has grown substantially since 2000 and employs almost 50 percent of total employment in the sector today²⁸¹.

²⁷⁸ Premised on the collation, analysis and interpretation of data including biological samples

²⁷⁹ As a first step in developing the Bill, the Department of Health and Children (DoHC) initiated a consultation process and published a discussion paper in June 2008

²⁸⁰ *Quarterly National Household Survey*, CSO, Q4 2009; *Quarterly National Household Survey*, CSO, Q2 2000 and Q3 2009; and *Employment & Earnings in the Public Sector*, CSO, Q2 2000 and Q3 2009

²⁸¹ *Ibid.*

eHealth - An Area of Opportunity: Global and national trends are leading to significant change in the delivery of healthcare. This is driven by a need to increase productivity and reduce costs in an era of an ageing population and greater instances of chronic conditions. A major outcome is the shift from a hospital centric model towards a more in-community care system enabled by developments in healthcare instruments and products, information based medicine, and communications technologies.

This shift presents significant opportunities for the well established medical technologies and ICT firms based in Ireland and the realisation of returns from State funded research. Ireland also benefits from its island position and ability to ‘ring-fence’ wireless and radio spectrum/ frequencies which is particularly relevant in the context of e-health²⁸².

Initiatives such as Technology Research for Independent Living (TRIL), the Assistive and Remote Technology Services for Independent Living, and Dundalk Institute of Technology’s Centre for Affective Software for Ambient Living Awareness (CASALA), demonstrate Ireland’s capability in bringing together world class industrial and academic experts and multi-disciplinary skills, clinicians and patients to research and develop new technologies. The demonstration effect of these initiatives should be leveraged to position Ireland as a test bed for eHealthcare products and services.

The full realisation of this potential may rely, to some extent, on a public procurement system that recognises total value for money, involving a strong capability in health economics, rather than lowest cost as a key determinant. Innovative medical products (diagnostics and devices) can have a transformative effect on the delivery and efficacy of patient care and can lead to significant cost reductions and efficiencies in the medium-term. The increased use of ICT within the sector would also have demonstrable impacts on productivity, efficiency gains and on improved patient outcomes²⁸³. In particular, the availability of digitised patient information and a networked ICT environment, across the healthcare system, will enable greater efficiencies in the provision and management of healthcare services and ensure that patients are treated within the most appropriate setting e.g. remotely, in clinic etc. The introduction of the proposed Health Information Bill is critical in this regard.

Other considerations and implications relate to the need for re-skilling of staff within both the private and public sectors, consistency in patient records management systems to enable integration of services and the need for patient education - in how to ‘read’ monitoring instruments for example. The absence of comprehensive and competitively priced NGNs and the current lack of integration across the healthcare system present major barriers in this regard.

Broadband infrastructures and ICT skills are a fundamental requirement for delivering on eHealth and for facilitating productivity enhancements throughout the Healthcare sector

Effective collaboration across healthcare, medical devices, pharma, and ICT sectors could transform growth potential for all of these areas

²⁸² *Opportunities for the Wireless Sector in Ireland*, Forfás, 2004

²⁸³ Of the current public healthcare budget totalling €15.9 billion in 2009, 97 percent relates to operational expenditure. A slight shift to allow for capital investment in ICTs should result in overall efficiencies and reduced costs in the medium-term

Recommendations: (Implementation will reduce barriers to growth for both the Health LifeSciences and Healthcare Services sectors in Ireland)

- Expedite the proposed Health Information Bill as a matter of priority.
[Department of Health and Children]
- Streamline the ethics approvals process, and enable electronic submissions, so that the principles of single opinion and parallel review apply to the approval of all clinical research carried out in Ireland
[Department of Health and Children]
- Develop and promote Ireland as a test bed for the development of new products and services in healthcare delivery involving all relevant stakeholders, patients, healthcare providers, Government Departments and Agencies²⁸⁴.
[Department of Enterprise, Trade and Innovation/ Department of Health and Children]

International Financial Services

Over the last two decades, Ireland has successfully established itself as an attractive location for international financial services and is recognised globally for its strong competencies in areas such as banking, asset management, and fund administration. Many leading international financial services firms have operations here and there are growing numbers of globally successful Irish owned firms, particularly in the areas of e-Payments and financial software. Ireland's attractive corporation tax regime is a critical component of this success and the Government's stated commitment to maintaining the existing tax rate has provided a certainty required by firms operating in this sector, as well as those seeking to establish operations here.

Employment within the industry in Ireland more than doubled over the period 2000 to 2009 from 10,800 to 24,692²⁸⁵. Exports have similarly grown strongly, increasing almost four-fold since 2000 to reach €13.2 billion in 2009²⁸⁶. The industry has been severely impacted by the global financial crisis with exports declining by 7.2 percent in value terms in 2008 and a fall in the net asset value of funds administered in Ireland²⁸⁷.

However, there are opportunities for future growth, and both IDA Ireland and Enterprise Ireland are working with existing and prospective client companies towards increasing the levels of international financial services activities here and capturing emerging opportunities (Figure 13). There is also potential to build on the existing IFSC to attract companies specialising in financial and support services to the growing international clean technology, carbon and renewable energy industries, and to become a centre of excellence for the

²⁸⁴ Building on the work of the *Nestling* (www.netwellcentre.org/projects) and *Technologies for Independent Living* (www.trilcentre.org) initiatives (involves ICT, Healthcare, Medical Devices sectors). The concept of developing test beds of this kind is also highlighted as a potential area for action in *Knowledge Society Strategy: Technology Actions to Support the Smart Economy*, DCENR, 2009

²⁸⁵ *The Finance Dublin Yearbook 2010*, IFSC, 2010 - <http://www.ifsconline.ie>

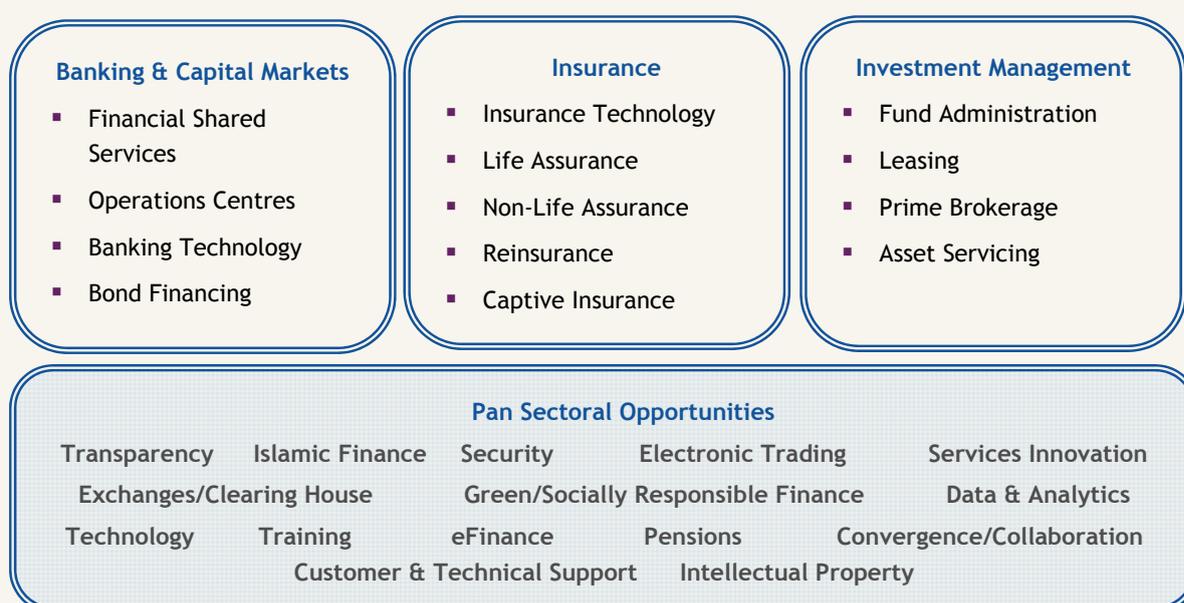
²⁸⁶ *Balance of International Payments 2009*, CSO, 2010

²⁸⁷ *Getting Fit Again*, NCC, 2009

administration of funds managed under green principles²⁸⁸. The IFSC Banking and Treasury Group under the Department of the Taoiseach is currently developing plans to establish a green international financial services centre in Ireland and these need to be expedited.

The nature of the activities in this sector means that labour costs comprise close to 80 percent of total business costs. Companies cite this as being of particular importance, from the perspective of relative cost competitiveness and the realisation of future growth potential. The sector requires a high level of specialised skills in areas such as analytics, regulatory compliance and risk management and it is essential that ongoing initiatives to ensure an appropriately skilled labour force are maintained and augmented²⁸⁹.

Figure 13: International Financial Services - Areas of Opportunity



High speed broadband is a critical enabler of service delivery and developments within the sector, particularly in relation to the growth of eFinance²⁹⁰, which often demands instantaneous transmission of huge volumes of data. Ireland has made significant progress in improving levels of broadband coverage and take-up in the last two years. However, it is still behind competitor countries in terms of rolling out high speed next generation networks. The download speeds available in Ireland remain below the fastest speeds available to customers in other OECD countries. In data intensive global businesses, such as those in the financial services industry, there is greater demand for high quality broadband connections, as data flows increase. Greater investment in telecommunications infrastructure is required if Ireland is to keep a pace with capacity requirements and converge towards leading countries in this regard.

²⁸⁸ Green Finance incorporates carbon trading and the development of financial products and services specific to the requirements of the clean technology sector

²⁸⁹ Such as the *Finuas Networks Programme* managed by Skillnets (<http://www.finuas.ie>); and the *Project Maths Initiative*, Department of Education and Skills, (<http://www.projectmaths.ie>)

²⁹⁰ The provision of financial services and markets using electronic communication and computation

The pace of change within the financial services industry globally results in relatively short innovation cycles and as a result, formalised R&D functions are not commonplace either in Ireland or internationally²⁹¹. However, this should not be taken to mean that research does not play a central role in the sector. Research underpins innovation in international financial services and the industry is a leader in the adoption of new technologies to develop processes and products.

Transparent regulation is critical - that provides confidence to the market yet does not stifle innovation

Broadband - key to innovation, the development of new service offerings, and for global transactions

Recognition of the importance of research for driving growth and innovation in the industry led to the establishment of the Financial Mathematics Computation Cluster (FMC²) in 2009²⁹². FMC² is an industry-academic collaboration focused on the development of theory and methods for risk analysis (particularly timely in the context of the global financial crisis and the increased importance of risk assessment and management, security and regulation). In addition, a number of the HEIs, including the University of Limerick (UL) and University College Cork (UCC) are gaining recognition as centres of excellence in international financial services research. UL is home to one of only two fully equipped trading rooms in Europe, which enables development and testing of research in a 'real' world environment. The enterprise agencies will continue to work with their client companies to increase investment and capabilities in R&D and innovation and to build linkages with the HEI sector.

In the wake of the financial crisis, Ireland along with many other jurisdictions is modifying its approach to regulation within the sector. The Central Bank and Financial Services Authority of Ireland is in the process of introducing a 'risk-based' regulatory model that will ensure Ireland continues to have a 'best in class' regulatory regime. Effective and balanced regulation is a key locational consideration for investors.

Ireland's responsive and transparent regulatory regime has been critical to the growth of the sector to date and it is essential that this regime is maintained.

This in itself involves a challenging balancing act; as firms increasingly focus on competitiveness in international markets, it is vital that regulation is proportionate and does not hinder innovation.

²⁹¹ *Skills and Research Needs of the International Financial Services Industry*, EGFSN, 2007

²⁹² FMC² is a collaboration between the financial services industry, University College Dublin, Dublin City University and NUI Maynooth and involves government investment of over €4.1 million through SFI

Agri-Food

The food and beverage sector is one of the largest sectors globally with annual food retail sales of approximately \$4 trillion²⁹³. The industry is continually evolving, as food suppliers, manufacturers, and retailers adjust to meet the needs of consumers, and the increasing demand for a wider variety of higher quality products.

In Ireland²⁹⁴, the sector is highly export-oriented, provides significant direct and indirect employment throughout the country and contributes the highest proportion of IEE from agency supported firms. In 2009:

- More than 85 percent of total agricultural output was exported to over 160 markets worldwide;
- Exports exceeded €7 billion accounting for two thirds of exports by Irish owned firms²⁹⁵;
- Over 45,000 people were directly employed;
- Through its linkages with agriculture, farming and fishing communities, the sector influences the employment of an additional 90,000 people;
- In excess of €10.5 billion was spent in the economy representing 26 percent of IEE by agency supported firms; and
- A number of Irish owned firms are among the world's 50 largest food and beverage multinationals, ranked by foreign assets²⁹⁶.

The sector has considerable growth potential, driven by global demographic, socio-economic and consumption trends. The surge in growth in world population²⁹⁷, allied with rapid economic development in countries such as Brazil, Russia, India and China, will drive demand both for food and higher value products. Global demand for food is expected to increase by 30 percent over the period to 2020. Trade negotiations with third countries and the reshaping of the Common Agricultural Policy (CAP) will also add opportunities and challenges.

For Irish based firms, changes on such a scale will require a fundamental change in business models, a strategic focus on sustainability and productivity, and a deep knowledge of consumer trends, market potential and international competitors' positioning.

There are substantial opportunities - to both consolidate markets for meats and prepared foods within the EU and to take advantage of new and emerging markets for export growth. Opportunities include:

²⁹³ *Economic Research Service*, United States Department of Agriculture, 2009 - <http://www.ers.usda.gov>

²⁹⁴ The recent report, *Food Harvest 2020*, published by the Department of Agriculture, Fisheries and Food and consultation with the enterprise development agencies have informed the synopsis outlined here

²⁹⁵ *Food and Drinks Industry Ireland Sector Profile* - <http://www.fdi.ie>

²⁹⁶ *World Investment Report 2009*, United Nations Conference on Trade & Development (UNCTAD), 2009

²⁹⁷ The global population will reach seven billion in 2012 and eight billion by 2025. *World Population Prospects: The 2008 Revision*, Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, June 2009

- With increased production capacity Ireland can build new international markets in dairy²⁹⁸, beverages, seafood and niche meat products;
- New species development in the aquaculture sector offers the potential for specialised, organically produced products, to address growing international demand - while also stimulating the emergence of specialist ‘cottage’ producers in niche local markets. Though still a relatively young industry, aquaculture accounts for approximately 25 percent of the value of total fish production in Ireland²⁹⁹.
- An emerging and high growth opportunity exists in the functional foods/nutraceuticals segment to address the ‘wellness’ market, enabled by advances in bio and nano-technologies. Although a relatively small number of firms are involved in this segment today³⁰⁰, conservative estimates indicate that exports and employment doubled between 2000 and 2008³⁰¹. Ireland is already a global leader in the production of infant nutritional products accounting for 15 percent of the global supply of infant formula, and has a strong research reputation in glycosciences³⁰².

The development agencies are currently working closely with food client companies to expand business in the euro zone. Through investments in lean manufacturing processes³⁰³ and management development, some food manufacturers are already demonstrating significant enhancements in productivity. This is a critical first step in the necessary transformation to compete more effectively on international markets. Firms will also need to develop and/or acquire the relevant language skills and the ability to successfully translate consumer trends into commercially viable products³⁰⁴.

In terms of the increased focus on environmental sustainability, Ireland benefits from the high quality of its natural resources and the extent to which production is largely grass based. Future sustainable growth will require greater engagement by firms and the farming sector in innovation and R&D. Ireland has already developed competencies in dairy, genetics, animal husbandry and marine research in particular, through the funding of collaborative research, investments in Teagasc, the Marine Institute and the recent EI supported Food for Health Initiative (FHI). Teagasc and UCC have also launched a Strategic

*Evidencing and marketing
Ireland's sustainability - a
priority for overall market
expansion*

*Lean Manufacturing and supply
chain management - essential
for productivity growth*

*Investments in R&D, Brand
Management and Innovation
from fork to farm - the way
forward to capture new
opportunities*

*Coordinated strategies are
critical to the ensuring the
sector realises its full
development potential (see also
Food Harvest 2020)*

²⁹⁸ The ending of the milk quota regime will allow Ireland to produce to its full capacity but prices may be volatile

²⁹⁹ Total seafood sales on both domestic and export markets amounted to €715 million in 2008 - <http://www.eumatters.ie/Ireland-and-the-EU/Fisheries.aspx/>

³⁰⁰ Including Alimentary Health, Glanbia, Cybercolloids, Wyeth and Abbott

³⁰¹ Forfás estimate derived from *ABSEI 2008*, Forfás, 2010

³⁰² Enterprise Ireland, *Irish Food Processing Sector*, 2009 (unpublished)

³⁰³ Supported by Enterprise Ireland, co-funded by DETI and DAFF

³⁰⁴ UK markets present significant challenges in terms of currency risk and exposure

Alliance bringing together their combined resources and expertise in food research. A key priority of the Alliance is to enhance engagement with industry.

Considerations regarding food security have also increased in importance and brand recognition is vital to build consumer trust from ‘farm to fork’ and confidence in traceability. In this context, the regulatory environment, adherence to high standards, use of technology and RFID³⁰⁵ are crucial if we are to build on our international reputation for safety and quality. This is closely aligned to the sustainability agenda which is having a transformative impact on many parts of the food sector and is stimulating growth in the organic food sub-sector. Environmental sustainability has been taken up by a number of the large retail multiples who now require suppliers to demonstrate production processes that adhere to green standards.

It is critical that Ireland differentiates and promotes the food sector, based on its strengths in natural resources, sustainability, traceability and food safety. The development agencies are actively working on authenticating and developing a consistent marketing proposition that addresses consumer needs and is customised for emerging markets³⁰⁶.

Although there are significant opportunities, the sector in Ireland faces challenges that need to be overcome if it is to fully realise its potential. The relatively small size of Irish food processing companies across all categories compared with international competitors limits their capacity to develop economies of scale³⁰⁷. This has been cited as a concern by the larger scale companies in Ireland for a number of years - too large for Irish markets in terms of competition policy and yet too small to benefit from efficiencies of scale required to engage effectively in overseas markets.

Similar issues arise in farming where the average holding is relatively small and tends not to be as technology intensive as a result. Greater use of technology and more effective herd/crop management practices would increase efficiencies and Teagasc is actively working with its client base in this context³⁰⁸.

Ireland’s geographical location has implications for transport and logistics which need to be taken into consideration. This is relevant in terms of the nature of the product (e.g. fresh or chilled produce versus frozen) and the consumer focus on sustainability and carbon footprint (e.g. air miles).

Firms also contend that Ireland’s relatively high costs of energy and waste - which are a considerable component of their overall input costs - are limiting their capacity to compete effectively on international markets.

An issue has been raised on a number of occasions by firms relating to the number of Government departments and agencies involved in food sector policy and the coordination of

³⁰⁵ Radio Frequency Identification (RFID)

³⁰⁶ For example, Bord Bia is working with industry and academia to develop a sustainability ‘quality mark’ to support branding and marketing

³⁰⁷ This is compounded by the fact that firms have not traditionally invested in technologies or lean manufacturing processes to enhance productivity - although this is starting to change as highlighted earlier

³⁰⁸ The overall vision for sustainable growth as set out in *Food Harvest 2020* highlights the need to address fragmentation in primary production and consolidation at processing level, and recommends engagement between the Department of Agriculture, Fisheries and Food and the Competition Authority with regard to the sector’s global operations and the comparative scale of its main competitors

delivery of support services³⁰⁹. This adds complexity from the perspective of the firm, particularly in emerging areas such as functional foods, and where coordinated strategic responses are required to deliver the most efficient use of resources to realise growth potential.

Recommendations:

- Address fragmentation in the primary production and food processing industries (for example, through consolidation and collaboration) to enable the Irish food industry to compete more effectively on international markets.

[Department of Agriculture, Fisheries and Food/ Department of Enterprise, Trade and Innovation/ Enterprise Ireland]

- Streamline and coordinate supports for the food sector in Ireland and provide clarity to stakeholders in the agri-food sector regarding available supports, ensuring that they are accessible, effective and responsive to industry and firm growth needs.

[Department of Agriculture, Fisheries and Food/ Department of Enterprise, Trade and Innovation]

- A concerted and coordinated approach is required involving primary producers, industry, Departments and State agencies to the development of a food sector so that efficient and environmentally-friendly production, innovation in value added products, acting 'smartly' and effective marketing policies deliver sustainable growth in quality segments of the international marketplace.

[Department of Agriculture, Fisheries and Food/ Department of Enterprise, Trade and Innovation/ Bord Bia/ Enterprise Ireland/ Bord Iascaigh Mhara]

Other Internationally Traded Services and Activities

Growth in market services has been phenomenal over recent years. This broad sector accounted for almost two thirds of all employment and contributed more than 60 percent of value added within the economy in 2008³¹⁰.

It is difficult to predict the exact nature of 'new' services - which are driven by changing consumer demands, demographics, disposable incomes and the pervasive nature of the Internet. Individual sub-sectors have been discussed in other sections (digital entertainment, retail, healthcare, financial services etc.). This section considers these emergent 'e' enabled services as well as business and management services between affiliates.

The phenomenon of the Internet, mobile media and social networking has led to the development of a range of location based services and personalised services. There are likely to be others, not yet 'in vogue', that will be created by innovative firms responding to and/or pre-empting customers' changing demands.

³⁰⁹ Including the Departments of Enterprise, Trade and Innovation, Agriculture, Fisheries and Food, Communications, Marine and Natural Resources and agencies, Enterprise Ireland, Bord Bia, Bord Iascaigh Mhara, Teagasc, Science Foundation Ireland and the Food Safety Authority

³¹⁰ Latest comprehensive data available on GVA is 2008. *National Accounts 2008*, CSO

The shift toward specialisation, collaboration and partnerships has driven innovation in revenue business models - presenting new business opportunities for brokers, information intermediaries, advertising services, mashups and aggregators³¹¹. Many of these activities can be delivered *from* anywhere in the world *to* anywhere in the world - and in this context present potential for SMEs and regionally based firms. In addition to core expertise in the underpinning ICTs, success in 'e' enabled services requires a skills base including capacity in marketing, design and brand management, as well as customer relationship management. These skills requirements are not new but take on an increasing importance in the context of the accelerated pace of change in this area and intensified global competition.

As supply chains become even more disaggregated, firms that operate on a global basis tend to centralise and/or outsource business functions to locations which make optimal business sense. Centralised functions can be offered by a subsidiary as a 'service' to an affiliate - some of which are customer facing, such as supply chain management and technical support, and others which are internal to the organisation, including financial shared services, R&D and franchise management. Ireland has had considerable success in attracting mobile investment in many of these activities and today Supply Chain Management contributes €11.6 billion to exports³¹².

Historically, costs have been the primary driver of location decisions for shared services and business process outsourcing (BPO) operations. Although cost remains a key driver, other factors, such as the quality and availability of labour and access to talent, increasingly drive the selection of the location as the nature and scale of the processes become more complex. These complex processes require a strong competence in management and decision making capability, in risk and regulatory management skills, in business process engineering (including, for example, Six Sigma) and language skills³¹³.

It is critical that Ireland continues to address cost competitiveness issues and to develop a compelling value proposition based on higher order skills and process capabilities in order to continue to attract investment in shared services and headquarter activities, and to retain higher value functions of Irish MNCs in Ireland. The availability of cost effective, high speed NGNs is an imperative.

³¹¹ Mashup: A web page or application that uses or combines data or functionality from two or more external sources to create a new service. Aggregators: for example *mServe Ireland* provides a single point of access to all of Ireland's mobile phone subscribers, facilitating rapid implementation of content or applications for third parties

³¹² Merchandising (SCM) contributed 50 percent to exports in Other Business Services in 2009. *Balance of International Payments 2009*, CSO, 2010

³¹³ *Global Shared Services Survey 2009*, Deloitte Consulting LLP, 2009

Emerging Opportunities and Untapped Potential

Clean Technology (infrastructures, goods and services)³¹⁴

Increased consumer awareness of environmental issues, international agreements, regulation and industry responses have driven remarkable growth of the global clean technology sector³¹⁵. The global market for clean technology was estimated to be €1.1 trillion in 2007 and is forecast to grow to €1.5 trillion by 2012³¹⁶. Europe is the region expected to generate the steadiest growth over the period 2010-2014³¹⁷.

The High Level Group on Green Enterprise has identified a number of sub-sectors which offer particular potential for Ireland:

- Renewable energies, particularly wind, wave and tidal (refer also to the following section on Marine and Maritime);
- Efficient energy use and management (including the sustainable built environment);
- Waste management, recovery and recycling (including waste to energy);
- Water and wastewater treatment; and
- Environmental consultancy and services.

The sector is at a relatively early stage of development in Ireland and benefits from distinctive natural resources, which have considerable renewable energy potential, and from public investment in underpinning R&D and infrastructures. There is a growing base of companies in the sector and many of these are engaged in leading edge R&D and innovative activities to bring new clean tech products and services to the market.

An estimated 6,500 people were employed in the clean tech sector in Ireland in 2008 and there is potential to increase this significantly, predicated on taking the necessary actions now³¹⁸. Ireland and IDA Ireland have established dedicated Clean Tech teams to drive the development of the sector, and SFI supports world class energy research programmes building on the existing clean tech R&D centres in the HEIs. The sector typically requires significant inter-disciplinary knowledge of scientific and engineering principles, including chemistry, materials science, mechanical and electrical engineering, biotechnology, environmental sciences and ICT³¹⁹. In this context the Expert Group on Future Skills Needs is

³¹⁴ This material builds on a 2008 Forfás study, *Environmental Goods and Services Sector on the Island of Ireland*, Forfás/ InterTradelreland, 2008 and *Developing the Green Economy in Ireland*, Report of the High Level Group on Green Enterprise, 2009 which was supported by DETI and Forfás

³¹⁵ The sector is very broad and includes a wide range of activities, from cleaner production technologies, to waste management, to renewable energy production

³¹⁶ With a projected value of €2.2 billion by 2020. *Green Jobs: Towards decent work in a sustainable low carbon world*, United Nations Environmental Programme (UNEP), 2008

³¹⁷ Europe's overall investments in Clean Tech were estimated at \$50 billion in 2010 and this is expected to grow 2-3 percent per annum to 2014. *Clean Technology Annual Deals Analysis 2010*, GlobalData, 2010

³¹⁸ Estimated job potential of 80,000 although a proportion of these jobs may be realised through refocused strategies of construction and engineering firms, thereby maintaining existing jobs. *Developing the Green Economy in Ireland*, High Level Group on Green Enterprise, 2009

³¹⁹ *Developing the Green Economy in Ireland*, High Level Group on Green Enterprise, 2009

Dundalk 2020

The Sustainable Energy Authority of Ireland is leading the Irish element of a pan-European project which has selected three European towns, each with a population of approximately 30,000, to develop pilot sustainable energy zones. Dundalk will provide a showcase of innovative technologies, policies and practices that will be needed in order to develop sustainable energy communities in Ireland.

Over the next four years, energy-efficiency technologies will be installed in a range of buildings across the Dundalk Sustainable Energy Zone.

currently engaged in a study to identify the actions needed to ensure that Ireland has the appropriate skills base to take advantage of growth in the sector³²⁰.

The benefits arising from generation of alternative energy sources, in terms of employment and export opportunities, can only be fully realised if energy produced can be linked into the distribution network. Progress on the Grid 25 investment programme for upgrading the national grid infrastructures is critical in this regard.

Companies have cited challenges with the licensing and regulatory environment associated with the energy sector, particularly in terms of the time taken to process applications and associated lack of clarity. It is essential that these issues are addressed. It is also important that the planning process enables business development to work in harmony with, and not be constrained by, environmental considerations.

The high risk and specialised nature of certain clean technology sub-sectors, often involving new technologies, means that access to finance is a particular issue especially for start-ups and small firms. The global credit crunch also means that small and medium sized green businesses tend to be prime targets for mergers and acquisitions. This could have implications for the development of a strong cohort of indigenous firms of scale in Ireland.

The sector currently involves a large number of State agencies and Government departments including the Departments of Enterprise, Trade and Innovation, Environment and Local Government, and Communications, Energy and Natural Resources, as well as the enterprise agencies, the Marine Institute, local authorities, the Environmental Protection Agency, SEAI, and the commercial semi-state bodies. This increases the possibility of fragmentation and a lack of coherence in the development of the sector. It is critical that all stakeholders work in close collaboration to deliver on agreed objectives. In this regard, the report of the High Level Group on Green Enterprise, which involved key stakeholders, outlines a comprehensive plan and set of actions to develop the “Green Economy” in Ireland. The Senior Officials Group on Economic Renewal has been charged with overseeing implementation of the recommendations, demonstrating Government commitment to driving growth in the sector. A progress report is expected towards the end of 2010.

In particular, progress on the actions relating to green public procurement needs to be accelerated. Given the scale of government spending in the economy (annual public expenditure on goods, services and works amounts to circa €15 billion) there are considerable opportunities to stimulate growth in this sector and to mainstream best practice regarding environmental protection and energy efficiency through public sector

³²⁰ *Addressing the Future Skills Needs of Enterprise within the Green Economy in Ireland*, EGFSN, forthcoming

procurement processes³²¹. A range of countries have already adopted green procurement processes; Ireland needs to accelerate the implementation of green public procurement as a matter of priority³²².

Environmental concerns impact all sectors: Concerns around the environment and security of energy supply are driving existing businesses to look at new ways of doing business that are more energy efficient and environmentally friendly. Much of this is driven by regulatory demands and growing pressure from consumers for greener products and services. It also aligns with measures to enhance productivity and address energy cost concerns. Businesses themselves are looking to source more eco-friendly materials and processing techniques. This is certainly apparent in the food sector where retail multiples increasingly require suppliers to demonstrate energy efficient and environmentally friendly processes as part of their contractual obligations.

The sustainability agenda presents opportunities across a wider range of sectors and business activities including, for example, green construction, 'smart' vehicles and transport management systems, organic food, green financial services and energy efficient data centres. This is generating significant opportunities for companies to differentiate themselves from their competitors and to develop innovative product/service offerings. Many of these are currently early stage niche opportunities that have the potential to be major markets in the future.

Recommendations

- Green public procurement in Ireland and internationally can create significant opportunities for enterprises. Ireland needs to implement green public procurement as a matter of priority.

[Department of Finance/ National Public Procurement Policy Unit]

- To facilitate growth and development of the clean tech sector it is essential that measures are taken to:
 - Maintain investment in the enabling electricity network and expedite the processing period for grid connections
 - Resolve regulatory and planning barriers delaying the development of renewable energy projects.

[Department of Communications, Energy and Natural Resources/ Department of the Environment, Heritage and Local Government]

- Focus on export markets with high potential in eco-construction products and services and resource based technologies in water, waste and renewable energies.

[Department of Enterprise, Trade and Innovation/ Enterprise Ireland]

³²¹ *Report of the Procurement Innovation Group, DETE, 2009*

³²² Green public procurement is a process whereby countries meet their needs for goods, services, works and utilities by seeking and choosing outcomes and solutions that have a reduced impact on the environment throughout their whole life-cycle, as compared to comparable products/ solutions. A procurement procedure will be considered as green only if it has led to the purchase of a substantively 'greener' product, and only if the environmental characteristics of this product go beyond compliance with European or national environmental legislation. *Collection of statistical information on Green Public Procurement in the EU: Invitation to tender*, European Commission, 2007

Marine and Maritime

Globally, the marine environment is one of critical importance economically, environmentally and socially. It is a valuable source of food, minerals, and fossil fuels, and it has further potential, for example, in marine biodiversity to develop improved healthcare products and wind and wave power to generate renewable energy.

Ireland's ocean territory extends to 220 million acres, encompassing a wealth of natural resources and representing one of the world's hotspots for offshore wind and wave energy. Despite this the Irish marine economy is in its infancy with untapped potential for growth. The marine economy embraces a wide range of industries and activities and has particular relevance to regional economic development³²³. The key segments in Ireland include:

- **Marine services:** Tourism, transport, shipping and maritime commerce³²⁴
- **Marine resources:** Fishing, aquaculture, fossil fuels, renewable energies and marine biotechnologies

Latest available data³²⁵ indicates that the marine economy in Ireland had a turnover of €3.4 billion in 2007, employed approximately 17,000 individuals and had exports of €781 million. Over the period since 2002 there has been a shift in employment away from primary production sectors of fishing and aquaculture to the higher value added marine services sector.

Investments over the last ten years have had a transformative effect on the Irish marine R&D landscape, providing new and significant research capacity, capabilities and infrastructures. These include the INFOMAR Programme³²⁶, the largest civilian seabed mapping project in the world, which has generated a wealth of new data and knowledge about the physical, chemical and biological features of Ireland's largest natural resource. Considerable investments have also been made through the Sea Change Strategy, a national strategy for developing Ireland's marine economy involving all of the relevant bodies and players. The strategy aims to enhance Ireland's international profile as a leader in marine research and innovation and strengthen the competitiveness and environmental sustainability of the marine sector³²⁷. State investments in marine infrastructures and R&D have been complemented by growing private sector R&D activities across a wide range of technology and market areas³²⁸.

These enhanced R&D capabilities and marine infrastructures are now being employed to increase competitiveness in traditional marine sub-sectors and to open up new and

³²³ Some aspects are included in more detail in other sections of the report, including Tourism and Wave Energy

³²⁴ Marine commerce activities are focused around Dublin's shipping and financial community and are underpinned by the attractive taxation environment. Ireland is one of the top 15 ship finance locations in the world - <http://www.imdo.ie>

³²⁵ *Report on the State of Ireland's Marine Economy*, Socio-Economic Marine Research Unit, forthcoming

³²⁶ Previously the Irish National Seabed Survey - <http://www.infomar.ie/>

³²⁷ *Sea Change - A Marine Knowledge, Research & Innovation Strategy for Ireland 2007-2013*, Marine Institute, 2006

³²⁸ *SmartOcean Ireland: Consultation Document*, Marine Institute, 2010

innovative commercial opportunities, capturing previously unknown or untapped marine related potential in areas such as energy, food, environment, health and transport³²⁹.

Shipping and maritime transport: There are significant opportunities to build on existing expertise and investments to develop Ireland as an international shipping hub. A number of proposals have been put forward over the past number of years which aim to address the needs of the international shipping sector for deep sea facilities, as they move toward larger vessels. Given the importance of deep-water port facilities for future international trade, a national approach is needed to assess global supply/demand and to determine the optimum location for such investment.

Health: Marine biological/chemical resources are valuable inputs to drug development, biomedical devices, food ingredients (nutraceuticals) and industrial chemicals.

Seafood: There is significant potential to take advantage of strong and growing international demand (refer to earlier section on the Agri-Food sector).

Energy: Development of renewable wave and tidal energy sources to address increasing environmental concerns, enabled by advances in technology presents significant opportunity. Currently the marine energy sector is dominated by non renewable oil and gas resources.

This sector is in its infancy but has major market potential and there has been considerable public and private investment in the area, through programmes such as the Ocean Energy Initiative and through the Ocean Energy Development Unit established as part of the *National Strategy for Ocean Energy*³³⁰. Ireland provides an ideal test bed for new technologies particularly in relation to wave technology, for example, the *Smart Bay* project in Galway.

The Department of Communications, Energy and Natural Resources is developing a preliminary plan for offshore renewable energy and it is essential that this is finalised to progress development of this sector³³¹.

Environment: There are increasing opportunities around the application of ICT and engineering technology in areas such as environmental monitoring, control systems for energy efficiency, and new services based within internationally traded sectors, leveraging Ireland's strengths in engineering and ICT sectors.

The renewable energy and environmental opportunities are also core to the clean technologies sector discussed above - demonstrating the breadth of the marine potential and convergence between formerly discrete sectors.

The scope of the marine sector and the multiplicity of actors involved has led to a somewhat fragmented approach to its development and support to date³³². Realising the full potential

³²⁹ *Marine Industries Global Market Analysis*, Douglas Westwood Ltd., 2005 and *An Integrated Maritime Policy for the EU*, European Commission, 2007

³³⁰ *National Strategy for Ocean Energy*, Sustainable Energy Authority of Ireland/ Marine Institute, 2006

³³¹ *Preliminary Offshore Renewable Energy Plan*, Department of Communications, Energy and Natural Resources, forthcoming

³³² Departments of Enterprise, Trade and Innovation, Agriculture, Fisheries and Food, Communications, Energy and Natural Resources, Environment, Heritage and Local Government, the Marine Institute, Teagasc, the Irish Maritime Development Organisation, Waterways Ireland, the Office of Public Works and local authorities etc.

of this sector requires an integrated and collaborative approach across all elements, particularly in relation to:

- Spatial planning and investment to ensure that marine based infrastructural activities are properly coordinated and delivered in a balanced sustainable manner, such that all developments are reconciled with surrounding maritime activities and do not pose a risk to the marine environment (for instance, ensuring that infrastructural developments in ports do not impact negatively on local fishing communities and marine habitat etc).

The development of a comprehensive marine spatial planning framework is essential in order to ensure a coherent approach in developing the marine and maritime economy and to ensure that Ireland meets its obligations under the EU Marine Strategy Framework Directive.

- Leveraging and building on existing strengths in life sciences, ICT and clean technology to position Ireland as an emerging ocean technology cluster and to take a lead in convergence using the comparative advantage of Ireland's largest natural resource.

In this context, the Marine Institute has prepared the *SmartOcean Strategy*³³³ highlighting the opportunities for Ireland in this area and outlining how Ireland, within the framework of a 'SmartOcean Innovation Cluster', can develop the marine sector to capture untapped potential and to create 'new' commercial marine related opportunities which have global applications.

Recommendations:

- Advance the *SmartOcean Strategy* and the Offshore Renewable Energy Development commitments, which includes investment in flagship projects such as SmartBay and the grid connected Ocean Energy test site in Belmullet, to facilitate a diverse range of companies to access ocean RD&I and test platforms where they can test new concepts, equipment, solutions and services in a real ocean situation.

[Department of Communications, Energy and Natural Resources/ Department of the Environment, Heritage and Local Government]

- Support the emergence of a marine spatial planning framework for Ireland and the implementation of the EU Marine Strategy Framework Directive.

[Department of Communications, Energy and Natural Resources/ Department of the Environment, Heritage and Local Government]

Creative Industries

The creative industries involve the creation, production and distribution of goods and services that use knowledge and intellectual property as a primary input. Creative industries are virtually synonymous with innovation, characterised by a rapid innovation cycle, responsive to changing customer demands and intense competition. Creative industries encompass a wide range of activities, ranging from the more traditional areas such as visual and performance arts and literature, to the more technology intensive areas of film industry,

³³³ *SmartOcean Ireland: Consultation Document*, Marine Institute, 2010

broadcasting, digital animation and electronic games, and more service oriented areas such as industrial design, architecture and advertising.

Globally, the overall sector is experiencing rapid growth driven by increasing consumer demand for creative goods and services and continuous advances in digital technologies and ICTs³³⁴.

Design and Creative services also have a pervasive impact across all business sectors, and the visual and performing arts in particular also play a strong role in raising Ireland's cultural profile internationally and as an integral part of Ireland's tourism product.

Ireland has strong and internationally recognised capabilities in many of the creative industries, particularly in:

- Digital media, audiovisual media and advertising services (digitally based and traditional);
- Design and creative services;
- Industrial, graphic and fashion design and 'arts and crafts';
- Architecture and interior design; and
- Visual and performing arts: dance, music, painting, sculpture, theatre, photography.

The diverse nature of the creative industries adds complexity in terms of their cohesive development. Supporting initiatives to date have included the development of the Digital Hub, tax incentives for film and video production, and a range of grants specific to the arts and theatre (some of which are aimed at embedding and promoting Ireland's culture and play a central role in its tourism offering). Yet the contention is that the sector still has considerable untapped potential. Its overall growth may currently be hampered by the fact that a number of Government departments and agencies are responsible for particular segments, and some aspects of the sector are still considered 'cottage' industries.

The evolution of the digital era has shifted this thinking to some extent and provides the basis for significant growth opportunities which is discussed in more detail below.

The **Digital Media sector**, and eGames in particular, presents high growth potential and opportunity for Ireland to build on its success to date. Global revenues from digital and mobile media are expected to account for 11 percent of total spending (or \$234 billion), in the media and entertainment sector by 2012, up from 5 percent in 2007³³⁵. This growth in demand for digital media offers significant potential for the new and established creative companies in Ireland. Within this sector, the electronic games sub-segment has a compound annual growth rate of 10.3 percent and global sales are expected to reach \$68.4 billion in 2010³³⁶. In more recent years, Ireland's success in attracting foreign investment in the electronic games sector and its success with digitised animation has gained media attention - and the nature of this sub-sector is such that 'success breeds success.' The sector currently employs close to 1,500 people in Ireland, across a range of activities including design,

³³⁴ International trade in creative industries grew 8.7 percent per year between 2000 and 2005 to reach \$424.4 billion. *Creative Economy Report: The Challenge of Assessing the Creative Economy: Towards Informed Policy Making*, United Nations, 2008

³³⁵ *Global Entertainment and Media Outlook 2008-2012*, PricewaterhouseCoopers (PwC), 2008

³³⁶ *Ibid.*

animation, development, localisation and online player support, a four-fold increase from 2002, which compares very positively with international leaders in the industry³³⁷.

The availability of a skilled workforce has been a key factor in the growth of the sector here with games companies also citing the availability of supports and access to EU markets as influencers in their decision to locate here. Broadly speaking, there is a high level of complementarity in the required skills base across the digital content area; namely for artists, programmers, and people with a high degree of competency in maths as well as marketing expertise. International competition in the digital content sector is intense and it is essential that Ireland has the core skill base to take full advantage of the opportunities in this area.

A Pervasive Impact: The creative industries are increasingly recognised in enterprise policy globally for their role in stimulating innovation and productivity improvements across *all* business sectors. For instance, design is a key competitiveness factor for all companies seeking to differentiate their product or service, irrespective of the sector or markets that they operate in. It is relevant to the ‘look’ and usability of a product or service and is critical for branding and marketing, particularly for niche, premium products. Design is often embedded and implicit within a product or service so its impact is not necessarily readily understood or valued.

Cultural products and services, such as festivals and galleries, play a core role in the vitality of countries, cities and regions as places to live, work and visit. They also have a significant impact on international perceptions of a location, thereby influencing business investments generally and sectors such as Tourism in particular.

Overall, future growth for the creative industries is dependent on the availability of an appropriately skilled labour force, increased awareness and understanding of its cross sectoral impact, the availability of next generation broadband infrastructures and a regulatory regime which assures a “best in class” IP protection (including patents, trademarks and copyright). Increasing levels of innovation within the Irish based creative industries is key to ensuring their continued growth and successful expansion into international markets.

What is distinctive to this sector is the fact that it often relies on flexible networks of companies and independent artists coming together to work for relatively short periods of time on specific initiatives. Networks and alliances can play a strong role in supporting the creative industries in terms of bringing relevant companies and individuals together and for accessing appropriate supports in relation to protection and exploitation of intellectual property.

There are some regional initiatives in place to promote networking within the industry, including for example, the CreativeD Alliance and the Digital Hub. However, a national initiative would considerably enhance the overall potential of the sector and raise its visibility in international markets.

Flexible Networks are core to how the creative sector operates

Access to Funding - a particular issue for this sector

³³⁷ The UK games industry, employing 10,000 people, is the third largest games industry in terms of sales after the US and Japan, *The Games Industry in Ireland*, Kerr, A., and Cawley, A., 2009; and *Digital Britain*, UK Department for Business Innovation and Skills and Department for Culture, Media and Sport, 2009

A difficulty in accessing funding for SMEs is believed to arise due to the project based and generally high risk nature of the sector. State agencies such as Enterprise Ireland, the Digital Hub and the Irish Film Board provide financial and advisory supports to the sector; it is important that this is complemented by greater levels of involvement of international financial institutions and VC companies.

Recommendation

Establish a national Creative Alliance network with membership from Government, industry, education, State Agencies and the not-for-profit sector. Key objectives of the Creative Alliance should be to:

- Facilitate networking and collaborations across the creative industry sub-sectors, such as digital media (including audiovisual content creation) and design, particularly across MNCs, SMEs, sole traders and academia;
- Promote greater linkages between creative design companies with software and manufacturing companies, particularly in relation to product design and development;
- Develop/promote education and training initiatives to increase capacity and skills in the areas of design and innovation; and
- Develop the capacity of companies in the creative sector to engage in international trade through exporting and greater involvement in the tourism sector.

[Department of Enterprise, Trade and Innovation/ Department of Tourism, Culture and Sport/ Culture Ireland]

Education Services

The global market for education services is significant and expanding - and presents opportunities for growth in foreign earnings for both public and private sector providers³³⁸; the following global trends are evident:

- HEIs are responding to the increased demand from emerging economies, and are attracting overseas students. English speaking countries are particularly attractive in this regard;
- There is an increased provision of services in emerging markets, either directly, or by forming global partnerships or alliances with local institutions;
- The use of technology has enabled the remote delivery of education and blended learning (a combination of on-site and distance learning);
- eLearning, a sector in its own right, is an expanding market, beyond the educational environment to the corporate world (and often combined with knowledge management).

³³⁸ The nature of economic benefit from selling education services to students from overseas is complex - economic benefits tend to be higher arising from repatriated profits from overseas provision, or arising from full fee paying non-EU students

Ireland already has a foothold in each of these of these opportunity areas. There were an estimated 35,800 international students in Higher Education and approximately 93,800 students in the English language sector for the 2009/2010 academic year³³⁹.

A number of public and private sector HEIs have established a market presence and/or alliance in emerging markets such as China and Russia. There is also a strong cohort of software companies delivering to the eLearning market.

The potential in education services has been identified for many years and as part of the Government's *Building the Smart Economy* a renewed focus has been accorded to this agenda:

- The High Level Group on International Education is developing a five year strategy to enhance Ireland's performance as a centre for international education.
- Aspects relating to quality of pastoral care and the student immigration system are now being addressed³⁴⁰.
- Enterprise Ireland has assumed responsibility for managing the 'Education Ireland' brand which is dedicated to the development and promotion of Ireland as an international centre of excellence.

The potential for both international trade in education services, and the education sector in general, could be significantly enhanced by forging effective cross fertilisation between education services, eLearning, eGames (gaming strategies, simulation and virtualisation), tourism and ICTs. Such cross sectoral engagement does not automatically happen and mechanisms need to be put in place to stimulate collaborative efforts.

*Cross fertilisation between
education services, eLearning,
Games sector, tourism and
ICTs
-
A lever for enhanced growth*

At the same time, Ireland's non-membership of Schengen places it at a relative disadvantage in terms of ease of international access which may hinder the realisation of the full potential for internationalisation in this sector.

The recommendation in the main report relating to ensuring strong and clearly designated leadership for sector development is particularly relevant for Education Services, as are those relating to networks and alliances and expanding into new and emerging markets.

³³⁹ *International Students in Higher Education in Ireland 2009/10*, Education Ireland, May 2010

³⁴⁰ The Advisory Council for English Language Schools (ACELS) is now part of the National Qualifications Authority of Ireland. The Department of Justice and Law Reform has already announced plans for an overhaul of the student immigration system

A Renewed Focus on Mature Sectors

Tourism and Hospitality

A number of global trends and events over the past decade have had a negative impact on tourism, both globally and for Ireland. Tourism is particularly vulnerable to global shocks including terrorist attacks, health scares and natural disasters. Other factors such as currency fluctuations, high oil prices, economic conditions in outbound markets, environmental concerns and lack of liquidity resulting from the financial sector crisis continue to challenge the sector.

Globally, real GDP growth for the travel and tourism industry is expected to be 0.5 percent in 2010 (compared with -4.8 percent in 2009) and to average 4.4 percent per annum over the coming 10 years³⁴¹. Nationally, overseas visits to Ireland fell from 7.7 million in 2007 to 6.6 million in 2009, although this was offset somewhat by the rise in domestic tourism of 400,000 over the same period³⁴². Overall earnings for the sector in Ireland fell by €1 billion to circa €5.3 billion in 2009 (€3.9 billion in expenditures from overseas visitors and €1.4 billion in domestic tourism revenues)³⁴³.

The sector is predominantly made up of indigenous firms and sole traders encompassing a wide range of services including accommodation and restaurants, leisure, entertainment and transport. Because the tourism and hospitality sector is embedded across the country and involves firms and jobs that also serve local demand, it is not possible to put an exact figure on employment for the sector in Ireland. However, employment in accommodation and food services provides a proxy and in 2009 approximately 120,500 people were employed in these areas³⁴⁴. This represents a larger share of employment (at 6.1 percent based on 2008 data) than in many EU member states³⁴⁵. When tourism attractions, transport operators and the retail business generated by domestic and overseas tourists are factored in, it is estimated that the sector accounts for circa 190,000 jobs³⁴⁶.

Broadband - Essential for new ways to reach customers, and to stimulate collaborative approaches to product development and delivery

Indirect taxes impacting Ireland's relative cost base for tourism

International and national access and integrated transport networks - essential for future growth

Although the short-term outlook remains challenging, there are opportunities for growth over the decade to 2020³⁴⁷. Capturing such opportunities will require concerted efforts by firms involved in the sector and by Government to address identified issues and to enhance

³⁴¹ World Travel and Tourism Council - available at http://www.wttc.org/eng/Tourism_Research/Economic_Research/

³⁴² *Annual Tourism Facts 2009*, Fáilte Ireland, 2010

³⁴³ *Ibid.*

³⁴⁴ *Quarterly National Household Survey*, CSO, Q4 2009 - direct employment in accommodation and food service activities

³⁴⁵ *Labour Statistics Database*, International Labour Organisation, 2008. The EU 27 average (excluding Luxembourg) was 4.4 percent

³⁴⁶ *Annual Tourism Facts 2009*, Fáilte Ireland, 2010

³⁴⁷ *Tourism 2020 Vision*, World Tourism Organisation, 2001

Ireland's overall product offering. The sector aims to attract the mobile consumer, including the overseas visitor to Ireland and the potential 'stay-at-home' holiday maker.

Consumer trends now prioritise authentic travel experiences, value for money, a desire for social and cultural interaction and social and environmental responsibility. Success requires a more targeted approach by companies based in Ireland, with a well developed and differentiated product offering to address consumer needs, such as³⁴⁸:

- **Experiential Tourism:** providing tourists with 'authentic experiences,' building on Ireland's extensive network of cultural, heritage, gastronomy and attractions;
- **Eco-Tourism:** a greener and more ethical form of tourism which Ireland can benefit from, building on its existing international 'clean, green' image and track record in the nature tourism market;
- **Activity Based Holidays:** including sport, cookery, art, city breaks, marine leisure³⁴⁹ etc.;
- **Business and Incentive Tourism:** recently enhanced with the opening of the Convention Centre and the Aviva Stadium in Dublin.

In the short to medium-term, the best prospects for tourism are those markets in which Ireland has a strong existing presence. In particular, in the face of current difficulties, the focus of overseas tourism promotion is the larger markets in which the Ireland brand is already well-established - the US, UK and Germany, supplemented by the other major West European markets (France, Italy and Spain).

In terms of targeting new and emerging markets, there is potential to increase tourism numbers from both China and India but there will be a need to re-orientate the current product offering and make tourist visa arrangements more visitor friendly³⁵⁰. Tourism Ireland promotes the island of Ireland as a destination internationally and plays a pivotal role in capturing these opportunities. Sustained investment in developing and promoting Ireland's tourism brand is essential to further grow the sector.

Consistency of quality of service and value for money is critical to the success of this sector - to the extent that one bad experience by a consumer can seriously undermine Ireland's value proposition as a premium tourism and hospitality location. Word of mouth and references play a strong part in how attractive a destination (or service provider) is perceived - a fact that is further heightened by the pervasive use of travel reference sites such as *Tripadvisor*. The Internet has become the most popular method for consumers to research and book holidays, with 41 percent of all holidays booked online in 2008³⁵¹.

Ireland's tourism sector faces a number of challenges in terms of price competitiveness³⁵², internal transport infrastructure, and more recently, excess hotel capacity. Survey results

³⁴⁸ Fáilte Ireland has recently published a range of operational sub-sectoral strategies

³⁴⁹ Fáilte Ireland will be producing a comprehensive Marine Tourism Strategy in 2011

³⁵⁰ *New and Developing Markets Review*, Tourism Ireland, 2007. Ireland's non-membership of Schengen puts Ireland at a relative disadvantage to members of Schengen whereby a single visa works across the Schengen Area (an agreement among some European states)

³⁵¹ *The World Travel Trends Report* (ITB Berlin, 2009) contends that travel and tourism companies who adapt to address consumer needs will be best placed to succeed in the medium and longer term

³⁵² Ireland ranked 18th out of 133 countries and performs well on metrics of tourism infrastructure (hotel rooms, tour companies etc.) and the attitude of the population towards foreign visitors. *The Travel and Tourism Competitiveness Report*, World Economic Forum, 2009

show consistently high levels of satisfaction with the overall Irish tourism experience. However visitors do express dissatisfaction with the costs associated with holidaying in Ireland such as dining, entertainment and the general cost of living³⁵³. Companies within the sector cite labour costs, local authority charges and how they are applied (i.e. on a square footage basis) and indirect taxes as having a negative impact on competitiveness.

Firms and industry groups contend that the air travel tax (ATT), introduced in 2009 is having a negative impact on the sector³⁵⁴. If the tax is absorbed by the airline it lowers the profitability of routes and by extension on an airline's routing decisions; airlines may choose to reduce and/or eliminate routes in and out of Ireland. If the tax is passed on to the consumer it has a considerable disincentive effect for discretionary travel, leading to lower passenger numbers and lower revenues³⁵⁵. As an island location, an extensive international air network is critical - not only for tourism, but for all enterprise and Ireland's future economic growth.

Continued, focused investment in road and rail infrastructure is required to improve Ireland's internal connectivity³⁵⁶, as is the allocation of funding for the protection of historical monuments, management of natural landscapes, and the promotion of cultural and sports events.

The expansion of hotel stock, initially driven by the strong growth in tourism in the 1990s, was prolonged by other factors including the scale and extended duration of tax incentives. This has led to overcapacity in the hotel sector, which is creating challenges for traditional smaller operators in particular. Tackling overcapacity is complex and, ideally, requires a market response over time. However the opportunity exists to alleviate this issue, including the potential to allow change of designated use for the continuation of capital allowances.

The sector is quite fragmented, and many of the smaller providers have not yet harnessed the potential of the Internet and collaborative approaches towards developing comprehensive and integrated product offerings. Fáilte Ireland plays a key role in working with companies in the sector to enhance their productivity through training and greater use of ICTs.

Recommendations:

- Firms and industry groups maintain the air travel tax is harming competitiveness in the sector and have called for its elimination

The air travel tax was introduced in 2009 and it is timely to review its impact as called for by the Commission on Taxation³⁵⁷.

[Department of Finance]

³⁵³ *Visitor Attitudes Survey*, Fáilte Ireland, 2008

³⁵⁴ *Survival, Recovery & Growth - A Strategy for Renewing Irish Tourism 2009 - 2013, New Horizons for Irish Tourism - Mid Term Review*, Report of the Tourism Renewal Group, 2009. The tax involves a €10 euro charge per passenger travelling to destinations more than 300 kilometres from Dublin Airport (a lower rate of €2 applies for flights to destinations less than 300 kilometres)

³⁵⁵ *Working Papers SEC/2005/1067 & SEC/2005/467*, Commission of the European Communities, 2005

³⁵⁶ According to the Travel and Tourism Competitiveness Index, Ireland ranks 23rd out of 133 countries, in terms of external infrastructure and 48th with regard to internal infrastructure. *Tourism and Travel Competitiveness Report*, World Economic Forum, 2009

³⁵⁷ *Commission on Taxation Report*, 2009

- Significant additional capacity in hotels is creating challenges for the sector, particularly traditional operators. The potential to allow change of designated use for the continuation of capital allowances (for example, for health and education related activities) where there is overcapacity in certain areas should be explored.

[Department of Finance]

- Coordinate public investments in transport in order to improve internal connectivity and facilitate tourism travel around Ireland outside of the main urban areas.

[Department of Transport]

Retail and Wholesale

Given its size, scope and diversity, the wholesale and retail sector plays a vital role in the operation of any economy and society. Retail and wholesale activity can greatly impact how cities, towns and villages develop; *shaping* as well as being *shaped* by patterns of settlement and transport infrastructure.

Retail pricing impacts on the cost of living and consequently on pay expectations

Input costs, such as rents, rates and labour are priced into goods and services

Consumers will often seek alternative sources if retail pricing is considered uncompetitive

Labour and Property Costs - a Key competitiveness Issue

Planning Regulations - inhibiting growth potential?

In Ireland it is a sector that encompasses international outlets, a number of large indigenous players, and sizeable numbers of small businesses, often family owned and owner managed. It plays a key role in stimulating entrepreneurial activities, and is employment intensive by its nature. It employs in the region of 265,600 people in Ireland³⁵⁸ and has been one of the hardest hit by the recession, with employment falling by 15 percent over the years 2007-2009. Employment in the sector is forecast to rebound; however, it is likely to be beyond 2015 before it returns to pre-recession levels³⁵⁹.

The share of employment accounted for by wholesale and retail lies between 12 percent and 16 percent for almost all other EU countries, making Ireland's 14 percent³⁶⁰ share both typical and close to the 13.6 percent EU 15 average.

Consumer spending is one of the main drivers of the sector's performance - in Ireland the retail sector accounts for more than one third of household spending³⁶¹. It is interesting to note that the savings rate in Ireland has increased dramatically, which demonstrates that the reduction in consumption is not entirely due to lack of resources, but rather a perceived need to safeguard against future uncertainty. In this context, a restoration of consumer confidence is fundamental to a return to growth - which can be best triggered by a return to macro-economic stability and a degree of certainty.

³⁵⁸ Quarterly National Household Survey, CSO, Q4 2009

³⁵⁹ Sectoral and Occupational Forecasts, ESRI/FÁS, 2010

³⁶⁰ Quarterly National Household Survey, CSO, Q4 2009

³⁶¹ Based on 2004/2005 data: Household Budget Survey 2004-2005, CSO, 2007

Competitive pricing and value-for-money influence how and where consumers shop. Input costs and competition policy have an impact on ultimate pricing³⁶². The retail sector cites labour costs and property costs (rents and rates), as being of particular concern for the sector.

A recent study by McKinsey contends that regulation alone can largely explain wide variations in the productivity and employment in retail sectors around the world³⁶³. In terms of competition policy, the current planning system and guidelines are deemed by the Competition Authority to be at odds with the essence of competition in that they significantly hamper the size, location and working practices of retail outlets in Ireland³⁶⁴. Policy changes that facilitate the entry of new retail competitors lead to higher productivity growth, as do measures relating to extended opening hours, flexible hiring laws and zoning³⁶⁵.

The retail sector provides one of the main economic outlets for those with low levels of participation in higher level education, and as a result is perceived as a low skilled sector. The reality, however, is that much of the employment in the sector is quite highly skilled, and average qualification levels in retail are rising³⁶⁶. Strong sales, marketing, team-working and communications skills are critically important. As with all micro firms, managers of small and family owned businesses require a broad range of skills in entrepreneurship and general management, to manage in areas such as business strategy, branding, financial management, purchasing and human resource management.

Broadband - Essential for new ways to reach customers, to manage the Supply Chain and to Increase Productivity

Brands: A differentiator

Increased Potential to internationalise - franchising, partnerships and Alliances

Advances in technologies, particularly ICTs, are driving considerable change in the sector, impacting on customer relationship management, supply chain management, business and relationship management systems and service delivery. ICTs enable firms to reach customers in new ways, to customise services and to engage in eCommerce (online purchasing will continue to grow albeit at a slower pace than originally anticipated)³⁶⁷.

There is considerable variation in the performance and efficiency of companies in the sector, and there is scope for many independent indigenous retailers to enhance their productivity and innovative capacity, particularly through greater usage of ICT.

³⁶² As do exchange rates - although this is outside the control of Irish Government

³⁶³ *How to Compete and Grow, a Sector Guide to Policy*, McKinsey Global Institute, 2009

³⁶⁴ The Competition Authority contends that current planning regulations and guidelines make it difficult for new retailers to enter the grocery sector. *The Retail Planning System as Applied to the Grocery Sector: 2001 to 2007*, Grocery Monitor Project, 2008. The Authority considers that the guidelines overly influence the type of grocery retailers that trade in Ireland, where they locate, what they offer consumers and the prices that consumers pay

³⁶⁵ *How to Compete and Grow, a Sector Guide to Policy*, McKinsey Global Institute, 2009

³⁶⁶ Three quarters of those working in the sector are now educated to Leaving Certificate level or higher. More than a fifth of those working in retail are educated to third level, as are about one in seven of those working in wholesale

³⁶⁷ *Economic Forecast for Retail for 2009 to 2010*, Centre for Retail Research, 2008

Although distance can act as a barrier to Irish based retailers selling internationally, Ireland has already seen a number of specialist and niche retailers expanding their networks overseas, facilitated through online selling, franchising and/or setting up outlets in international markets. Larger international retailers are aggressively targeting the growing middle class in emerging markets, and for the most part, Irish retailers cannot compete at this scale. However, there may be scope for certain retailers to enter emerging markets through strategic alliances and partnerships.

Recommendations outlined in the main report have particular relevance for this sector. The work of the Competition Authority (specific to the Retail Planning Guidelines 2010) is of particular importance, as is the recommendation for a labour policy review which would improve labour market flexibility and cost competitiveness and those relating to non-pay costs (including Local Authority charges).

Recommendation:

The current retail planning system, through a variety of mechanisms, makes it difficult for new retailers to enter the Irish market, and for existing retailers to expand. The upcoming Review of the Retail Planning Guidelines should explicitly require local authorities to promote competition and choice.

[Department of the Environment, Heritage and Local Government]

Construction

The construction sector is highly labour intensive employing staff at all levels from casual labourers to skilled craftspeople, project managers, engineers and architects. The sector in Ireland currently employs approximately 136,700 people³⁶⁸. It also has a high multiplier effect in terms of expenditures on professional services, property management services, building supplies and equipment as well as on interiors and landscaping³⁶⁹. Small companies and independent contractors predominate. There are a small number of Irish well-renowned and successful MNCs, including for example CRH and Kingspan.

The property boom years saw employment grow from 166,300 people in 2000 to over 241,000 by 2008. However, this unsustainable growth was offset by a sharp 43 percent fall in employment from 2008 to 2009. Construction, together with associated services, has been the hardest hit by the down-turn and employment will not return to pre-recession levels by 2015. This in itself presents an immediate challenge in terms of re-skilling those most affected for alternative employment opportunities in the future.

Nevertheless, construction will continue to be an important sector within Ireland's enterprise structure and there are growth opportunities, both domestically and internationally.

New growth opportunities exist in areas driven by a combination of advances in science and technology, enabling 'smart' building development, new materials and processes, increased

³⁶⁸ *Quarterly National Household Survey CSO, Q4 2009*

³⁶⁹ Forfás analysis (unpublished) indicates that 147 secondary services jobs are created for every 100 in the sector (which is above the average of 99 per 100 for the overall internationally traded services sector)

use of off-site building processes (pre-built units), and government investment in infrastructures. Increasing environmental concerns and the green agenda provides an immediate stimulus, and already energy performance and efficiency regulations and standards³⁷⁰ are maintaining and creating employment opportunities for craft-workers with the skills to install renewable energy heating systems, ventilation systems and insulation. There is growing R&D capacity in the areas of 'smart' building and green construction within Irish HEIs (e.g. the TCD TrinityHaus innovation centre) and it is important to strengthen linkages between the HEIs and construction companies so that R&D can inform the development of innovative products and services

Growing populations and/or increasing affluence in many of the emerging economies is driving demand for construction. Global construction activity is expected to remain flat in 2010 and then to grow to nearly 5 percent in 2011, driven primarily by growth in the Chinese and South American Markets³⁷¹.

To date, Irish construction firms have tended to operate in the lower risk domestic markets but exports from the sector have shown strong growth, increasing by 35 percent over the period 2004 to 2008. There is scope to expand on this. A number of Irish based firms have world class competencies in areas such as civil and structural engineering, large scale project management, power/energy maintenance and generation, design and architectural services, and are well placed to capitalise on international opportunities in the sector. Enterprise Ireland has been working with large construction companies and related companies to help them target international opportunities, including, for example, those presented by the London Olympics in 2012.

Re-skilling and up-skilling of the construction workforce and those recently unemployed is a priority

Firms need to take advantage of new technologies, materials and construction methods

More firms need to develop and pursue internationalisation strategies

A particular challenge cited by companies, however, is the inability to access required levels of funding to cover tender and performance bonds³⁷². Performance bonds are needed to secure international contracts and can range from 5 percent upwards of the overall value of a contract depending on the location. The ongoing difficulties currently regarding access to finance are having a direct negative impact for companies in their attempts to secure performance bonds. This is hindering their attempts to re-orientate to international markets. Opportunities are being missed which in turn limit the wider potential for sub-contracting related services such as architecture, design, engineering etc.

Recommendations in the main report are of key importance to the Construction sector. Access to finance is *the* critical requirement for firms operating in the sector, while the recommendation relating to re-skilling and enhancing the employability of the unemployed is particularly pertinent.

³⁷⁰ Mandatory energy rating under the Energy Performance of Buildings Directive (EPBD) and improved energy efficiency standards under the Building Regulations

³⁷¹ *Global Construction Services Group - First Quarter Global Construction Outlook*, IHS Global Insight, 2010

³⁷² A performance bond is a surety bond issued by an insurance company or a bank to guarantee satisfactory completion of a project by a contractor

Transport, Logistics and Distribution

The transport, logistics and distribution sector in Ireland incorporates land, sea and air transport, and includes both public and private sector companies. It has been quite resilient throughout the recession, and employs about 93,100 people in Ireland currently³⁷³ generating €2.9 billion in exports in 2009 (up from €1.9 billion in 2004³⁷⁴). Freight companies have been the most significantly impacted by the global recession with world container traffic falling by 26 percent and air freight falling by approximately 10 percent. However, short-term data indicates that recovery in the sector started towards the end of 2009³⁷⁵.

Globally, and in Ireland, the transport and logistics private sector is evolving. Technology adoption has resulted in transformational change in how logistics, tracking, monitoring and communications are managed, resulting in improved productivity and reduced costs. For example, advances in sensor technologies now mean that data from large numbers of sensors can provide real time information on weather and traffic conditions. Logistics managers can now make constant routing adjustments that reduce congestion costs and increase a network's effective capacity, which optimises overall business efficiency.

Adoption by firms of ICTs will have a significant impact on productivity performance

Productivity improvements in the Transport sector result in increased competitiveness of other sectors

Up-skilling (particularly in ICT), continuous learning and management development are key to future success

Innovation in products and services to respond to climate change challenges

Scale and market reach is important for achieving economies of scale and there is evidence of consolidation in the industry.

For Irish based firms:

- Increased specialisation will require new combinations of value added services, built upon advanced applications of ICT, incorporating GPS, wireless, RFID and sensor technologies.
- The need for the sector to respond positively to the challenge of climate change will create a major drive for innovation in products and services.
- Deregulation will prompt continued liberalisation of public transport, particularly in urban bus services and this presents opportunities to both new and existing service providers.

Over the past fifteen years there has been significant national infrastructural investment resulting in major improvements in the quality of Ireland's internal and international transport networks. However, shortfalls remain to be addressed before Ireland reaches levels comparable with key competitor countries meaning that continued investment is essential.

³⁷³ There is a significant public sector and commercial Semi-State component within this sector - including CIE, Irish Rail, Dublin Bus and the Port and Airport Authorities

³⁷⁴ *Quarterly National Household Survey*, CSO, Q4 2009; *Balance of International Payments*, CSO, 2010; and *External Trade*, CSO, 2010

³⁷⁵ *New Data on Major Trends in the Transport Sector*, Press Release, International Transport Forum, 2010

Similarly, existing transport infrastructures are quite disjointed and the development of an integrated transport network (including both public and private sector players) and 'smart' traffic management systems have the potential to significantly improve productivity. This would facilitate the seamless and efficient movement of people and/or goods across different modes of transport, networked across the country, to benefit a wide range of enterprises and sectors, including manufacturing, the food sector, and, in particular, tourism.

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Appendix I

Steering Group Members

DETI	Forfás
<p>Sean Gorman (co-chair) Secretary General</p>	<p>Martin Shanahan (co-chair) Chief Executive³⁷⁶</p>
<p>Clare Dunne Assistant Secretary, Enterprise and Trade</p>	<p>Declan Hughes Manager, Enterprise and Trade Division</p>
<p>Martin Shanagher Assistant Secretary, Science and Technology</p>	<p>Jane Williams Former Chief Executive <i>(until June 2010)</i></p>
<p>Brian Whitney Assistant Secretary, Corporate Services</p>	<p>Helena Acheson Manager, Enterprise & Regional Policy Division <i>(until September 2010)</i></p>
<p>Dermot Mulligan Assistant Secretary, Labour Force Development, Department of Education and Skills³⁷⁷ <i>(until June 2010)</i></p>	

Forfás Research and Analysis

Maria Ginnity	Conor Hand	Mark Faherty
Céline McHugh	Kate Flinter	Niamh Day

³⁷⁶ Until his appointment as Chief Executive designate in June 2010, Martin Shanahan served on the Steering Group in his former capacity as Manager, Science, Technology & Innovation Division in Forfás

³⁷⁷ Dermot Mulligan was formerly Assistant Secretary, Labour Market, DETI until transfer of this section to DES

Appendix II

Terms of Reference

1 Background

Ireland is facing significant global and domestic economic challenges, and experiencing high levels of unemployment following a period of unprecedented growth. In the immediate term, steps have been taken by Government to improve fiscal stability, to support companies through the current crisis, including the Employment Stabilisation Fund and PRSI exemption, to increase supports for training and reskilling, and to improve access to finance for viable companies (especially SMEs).

At the same time, there are a number of key global drivers that will continue to have an impact on enterprise and Ireland's place in a changing global economy. Prior to the current downturn, there were indications of a shift in Ireland's enterprise base³⁷⁸. There is no doubt that the current environment of uncertainty makes it difficult to forecast the extent to which this shift will continue. Having said that, it is timely to undertake a review in the context of the current economic downturn and to recalibrate enterprise policy objectives and supporting strategies and actions for the medium term (to 2015), aligned with Smart Economy objectives³⁷⁹.

The DETI (and Government) has a role to play in:

- Articulating the key role of enterprise (broadly defined and encompassing domestically and internationally trading activities) to future sustainable economic growth;
- Outlining a clear overview of the shift in Ireland's enterprise structure and in providing a view of how it is likely to (how we want it to) evolve over the period to 2015; and
- Outlining the prioritised actions required to achieve objectives set for 2015.

And specifically (because of the current downturn):

- Identifying the (additional) actions needed to address employment losses and opportunities in the shorter term (2011); and the
- Interventions/actions required to address short term challenges being faced by enterprise in Ireland (e.g. access to finance).

³⁷⁸ Including e.g. shift in the balance between manufacturing and services activities, increased servicisation of manufacturing, increased ODI activity, increased R&D activity and an increased emphasis on innovation (including non-technological services innovation)

³⁷⁹ Previous such reviews include: *Shaping our Future*, Forfás, 1996; *Growing and Sharing our Employment*, Department of Enterprise and Employment, 1997; *Enterprise 2010*, Forfás, 2000; *Review of Industrial Performance and Policy 2003*, DETE, 2003; and *Ahead of the Curve: Ireland's Place in the Global Economy*, Enterprise Strategy Group, 2004

2 Objective

The objective of this review is to:

Identify the actions needed to ensure a competitive sustainable enterprise base that will deliver jobs and growth:

- Taking into account immediate short term needs; and
- In the context of the medium term to 2015.

This requires:

- An understanding of global economic trends and underlying drivers of change and their implications for enterprise (and sectors) over the period to 2015;
- An assessment of Ireland's potential within that context; and
- Identification of the actions and/or interventions that can help shape the evolution of a competitive, sustainable, enterprise base (with reference to existing relevant strategies).

Given the imperative to address the scale of the unemployment challenge, the review will consider the various sources of employment - including locally and internationally trading sectors:

- Sustaining employment in existing companies
- Growing employment in the existing base of companies
- Employment in new companies: entrepreneurship, FDI, and new market entrants.

3 Recommendations

The report will highlight both:

- Actions to address the immediate challenges - actions already being taken, and additional actions (if any) particularly in relation to labour activation/enhancing employability of the unemployed and access to finance; and
- Actions required to be taken now to ensure that Ireland is positioned to achieve economic growth and employment creation, and taking advantage of the growth opportunities for enterprise.

It is anticipated that the project team will draw from existing research and analysis to the extent possible in order to deliver on the objectives of the review³⁸⁰. Actions and recommendations will build upon and recalibrate relevant enterprise related strategies (see Appendix IV for listing).

³⁸⁰ Forfás and the advisory councils undertake robust analysis and research and have developed a range of enterprise relevant strategies and reports - <http://www.forfás.ie>

Appendix III

List of Abbreviations

ABSEI	Annual Business Survey of Economic Impact
BERD	Business Expenditure on Research and Development
BIC	Business Incubation Centre
BPO	Business Process Outsourcing
BRIC	Brazil, Russia, India and China
CAP	Common Agricultural Policy
CASALA	Centre for Affective Software for Ambient Living Awareness
CDB	County or City Development Board
CEB	County or City Enterprise Board
CER	Commission for Energy Regulation
CHP	Combined Heat and Power/ Co-generation ³⁸¹
CSET	Centre for Science, Engineering and Technology
DTA	Double Taxation Agreement
EGFSN	Expert Group on Future Skills Needs
EMEA	Europe, Middle East and Africa
EPA	Environmental Protection Agency
ERO	Employment Regulation Order
ESRI	Economic and Social Research Institute
FDI	Foreign Direct Investment
FETAC	Further Education and Training Awards Council
FHI	Food for Health Initiative
GDP	Gross Domestic Product
GERD	Gross Expenditure on Research and Development
GNP	Gross National Product
GVA	Gross Value Added
HEA	Higher Education Authority
HEI	Higher Education Institution
HERD	Higher Education Research and Development
HETAC	Higher Education and Training Awards Council

³⁸¹ CHP is the simultaneous generation of usable heat and power in a single process. It utilises the heat produced in electricity generation rather than releasing it wastefully into the atmosphere

HSE	Health Service Executive
ICSTI	Irish Council for Science, Technology and Innovation
ICT	Information and Communications Technology
IEE	Irish Economic Expenditure
IMDO	Irish Maritime Development Office
IP	Intellectual Property
IPR	Intellectual Property Rights
IRCSET	Irish Research Council for Science, Engineering and Technology
M&A	Mergers and Acquisitions
MDC	Management Development Council
MNC	Multi-National Corporation
NCC	National Competitiveness Council
NGN	Next Generation Networks
NMW	National Minimum Wage
NPPU	National Procurement Policy Unit
NPS	National Procurement Service
ODI	Outward Direct Investment
PRTL	Programme for Research in Third Level Institutions
REA	Regulated Employment Agreement
RFID	Radio Frequency Identification
RIMS	Records and Information Management Systems
SEAI	Sustainable Energy Authority of Ireland
SEMURU	Socio-Economic Marine Research Unit (NUI Galway)
SFI	Science Foundation Ireland
SRC	Strategic Research Cluster
SSTI	Strategy for Science, Technology and Innovation
STEM	Science, Technology, Engineering and Mathematics
STI	Science, Technology and Innovation
TRIL	Technology Research for Independent Living
VEC	Vocational Education Committee
VC	Venture Capital

Appendix IV

Publications Relevant to Enterprise³⁸²

Cross Sectoral:

Building Ireland's Smart Economy, Department of the Taoiseach, December 2008

Ahead of the Curve: Ireland's Place in the Global Economy, Enterprise Strategy Group, July 2004

Strategy for Science, Technology and Innovation, 2006-2013, Department of Enterprise, Trade and Employment, June 2006

Tomorrow's Skills: Towards a National Skills Strategy, Expert Group on Future Skills Needs, March 2007

The Report of the High Level Group on Manufacturing, Department of Enterprise, Trade and Employment and Forfás, March 2008

Catching the Wave - A Services Strategy for Ireland, Services Strategy Group, September 2008

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Towards Developing an Entrepreneurship Policy for Ireland, Forfás, September 2007

Innovation Ireland - Report of the Innovation Taskforce, Innovation Taskforce, March 2010

Annual Competitiveness Report 2009: Volume 2, Ireland's Competitiveness Challenge, National Competitiveness Council, January 2010

Sharing our Future: Ireland 2025, Forfás, July 2009

National Spatial Strategy for Ireland, 2002-2020, Department of the Environment and Local Government, November 2002

Technology Actions to Support the Smart Economy, Department of Communications, Energy and Natural Resources: Knowledge Society Strategy, July 2009

Driving Export Growth: Statement of Sectoral Competitiveness, National Competitiveness Council, December 2009

Enterprise Agency Strategies:

Horizon 2020: IDA Ireland Strategy, IDA Ireland, March 2010

Transforming Irish Industry: Enterprise Ireland Strategy 2008-2010, Enterprise Ireland, October 2007

Powering the Smart Economy: Science Foundation Ireland Strategy 2009-2013, SFI, March 2009

³⁸² Enterprise related publications by Government, State Agencies, and Government appointed groups from 2000 to 2010

Sector Specific Strategies:

Best Connected: Software from Ireland, A Strategy for Development of the Indigenous Software Industry 2009-2013, Enterprise Ireland, April 2009

Developing the Green Economy in Ireland: Key Actions, Report of the High-Level Group on Green Enterprise, November 2009

Creative Capital - Building Ireland's Audio-Visual Economy, Irish Film Board (forthcoming)

Health LifeSciences in Ireland - An Enterprise Outlook, Forfás, November 2009

Action Plan for Health Research 2009-2013, Department of Health & Children, 2009

Food Harvest 2020: A vision for Irish agri-food and fisheries, Department of Agriculture, Fisheries and Food, 2010

Anticipating Tomorrow: Shaping the Future of the Irish Food and Drink Market Towards 2020, Bord Bia, November 2007

Towards 2030: Teagasc's Role in Transforming Ireland's Agri-Food Sector and the Wider Economy, Foresight Report, Teagasc, May 2008

Sea Change - A Marine Knowledge, Research and Innovation Strategy for Ireland 2007- 2013, Marine Institute, 2006

Steering a New Course, Strategy for a Restructured, Sustainable and Profitable Irish Seafood Industry 2007-2013, Seafood Industry Strategy Review Group, 2006

Survival, Recovery and Growth - A Strategy for renewing Irish Tourism, 2009 - 2013, **New Horizons for Irish Tourism - Mid-Term Review**, Report of the Tourism Renewal Group, September 2009

Strategy Statement 2008-2010, Fáilte Ireland, 2008

Sector Skills Reports - Expert Group on Future Skills Needs (2006-2010):

Future Skills Needs of Enterprise within the Clean Tech/Energy Sector in Ireland (forthcoming)

Future Skills Needs of the Biopharma-PharmaChem Sector (forthcoming)

Future Skills Needs of the Wholesale and Retail Sector, April 2010

Future Skills Requirements of the Food & Beverage Sector, November 2009

Skills in Creativity, Design & Innovation, November 2009

A Review of the Employment and Skills Needs of the Construction Industry in Ireland, December 2008

Future Skills Needs of the Irish Medical Devices Sector, February 2008

The Future Skills and Research Needs of the International Financial Services Industry, December 2007

Future Skills Requirements of the International Digital Media Industry, Implications for Ireland, July 2006

Appendix V

Global Drivers of Change³⁸³

Financial Crisis	The global financial crisis has increased levels of uncertainty, impacted on credit flows and investment, and has resulted in increased emphasis on risk management & reputation management. Short term tendencies will slowly fade as the world recovers from the consequences, shifting toward sustainable longer term investment and planning horizons.
Structure of Global Markets	Slower growth in developed economies and rapid catch-up among developing nations are changing the structure of the global markets. Developing and emerging economies (Brazil, Russia, India and China) are projected to grow in economic importance.
Environmental Concerns	Presents opportunities for companies to innovate with alternative sources of energy, new solutions and services. Consumers will drive companies to reconsider aspects of their business such as product design, processes, materials, logistics and air miles.
Technology Advances	Have changed the ways in which companies do business. Developments in information and communications and sensor technologies facilitate the remote delivery of services and the development of new personalised and location based services, enabling productivity improvements, and stimulating open innovation.
Convergence	Formerly discrete sectors are converging, driven by customer demand and largely enabled by advances in science and technology. Personalised healthcare, combination healthcare products, and digital content services have emerged as a result of convergence, and the potential is boundless.
Mergers & Acquisitions	In many sectors large scale global companies are becoming even larger, taking advantage of emerging growth opportunities. Emerging market multinationals are growing in size and global reach. Small, innovative and technology rich companies need to find the optimum way within their own strategies to engage with global players.
Importance of Services	In developed economies, services are contributing a greater proportion to economic growth. This is driven by consumer demand for personalised services and within businesses by the disaggregation of supply chains, and, enabled by technology advances.
The importance of Cities	High value added services are attracted to urban areas, and cities are competing with cities for enterprise investment. Urban areas play a key role in driving the development of their hinterlands, and successful regions have a dynamic and vibrant city at their core.
Demographics	Growing and ageing populations and increased wealth in developing countries creates opportunities in new relatively untapped markets. Demographic segments are being targeted by industry on a global basis to address age specific needs, including for example, financial products, healthcare, social networking and e Games.
Scarcity of Talent	High-value talent is scarce relative to demand, and developing a strong and competitive education environment is a cornerstone to success. People are increasingly mobile, and Quality of Life to attract talent is an important factor for innovative economies.

³⁸³ *Sharing Our Future*, Forfás, 2009; *Ahead of the Curve*, Enterprise Strategy Group, 2004; *Six Worldwide Drivers Demand Customised Strategies*, IBM, 2008; and *The World in 2020*, Accenture, 2009

Appendix VI: Short Term Measures

Labour Market Activation, Employment Support and Access to Finance

Labour Market Activation: Education and Training

A number of measures have been introduced to increase provision and access to training and education programmes for those who have been made unemployed and/or are facing difficulties in gaining employment as a result of the current economic downturn³⁸⁴. These include:

- An additional 1,500 Post Leaving Certificate places from September 2009 supported by the Back to Education Allowance.
- An increase of 5,000 places on VTOS Schemes, specifically directed towards unemployed persons who are at least 21 years of age and who have been unemployed for more than 6 months.
- An extra 65,000 places provided under FÁS short, evening, online and blended courses and a suite of new courses to train and re-train people for jobs in new sectors, such as the green economy.
- In tackling youth employment, the Government has directed that prioritisation be given to the under 25's in terms of access to state supports such as the FÁS employment and training services. An initiative has also been put in place to immediately activate 18/19 year olds, removing the previous requirement that they be unemployed for 3 months or more to be eligible for such supports.
- Short time training programmes for those on a reduced working week and receiving social welfare payments and 280 new places on accelerated Level 6 Certificate programmes.
- A wide range of initiatives to assist 4,000 redundant apprentices to complete their apprenticeships including a redundant apprentice rotation scheme to facilitate switching those going into the educational modules with those requiring the work experience module and the development of a new education programme by the Institutes of Technology which allowed redundant apprentices acquire additional certified skills in the education sector.
- From September 2009 almost 1,800 unemployed people were supported to embark on part-time undergraduate and postgraduate courses that support the goals of the "Smart Economy".
- More than 1,000 unemployed people participated in new part-time transition programmes and accelerated programmes in the Institutes of Technology during 2009. The transition programmes provided skills development for studying at third level to unemployed people who may have been out of the formal education system for some time and the accelerated programmes allowed students to complete the first year of a standard two year programme in an accelerated manner.

³⁸⁴ In 2010, the State is providing approximately 183,000 places in education, training and employment programmes for the unemployed, compared with circa 79,500 places for the unemployed provided in 2008

- The Labour Market Activation Fund, announced in Budget 2010, which will focus training on the low skilled and those in structural unemployment (those formerly employed in the construction, retail and manufacturing sectors). Priority will be given to those under 35 years of age and the long term unemployed. A call for proposals was issued in March 2010 for training and education programmes aligned to areas of demand and skills needs as identified by EGFSN and Forfás. Up to 11,000 training and education places will be provided for priority groups of the unemployed under these programmes this year.
- Work Placement Programmes for graduates (1,000 places) and non-graduates (1,000 places) which provide work experience for up to 9 months and allow participants to retain their social welfare entitlements.

Employment Support

Several measures have also been introduced to protect vulnerable employment and to support the maintenance of existing jobs.

- The **Employment Subsidy Scheme** (temporary) is designed to encourage companies to retain staff during the downturn. The scheme provides an employment subsidy to enterprises employing 10 or more full-time staff which are judged to be vulnerable in the present climate. The scheme was initially open to exporting firms only, in the internationally traded services and manufacturing sectors. A second call in November 2009 broadened the eligibility criteria to include exporting and non-exporting firms in all sectors of the economy. Both calls are now closed and the scheme is supporting 1,696 companies who have committed to maintaining 103,997 employees to the end of November 2010.
- The **Enterprise Stabilisation Fund**, administered by Enterprise Ireland, is a €100 million fund designed to assist viable but vulnerable manufacturing and internationally trading firms through the recession. Companies will receive funding which will be used to support a range of activities including market development, productivity improvements and product development. To the end of June 2010, 199 projects have been approved under the fund totalling €72.489 million. These projects are to sustain 8,120 employees.
- The Government is also encouraging employers to create new jobs through reducing the costs associated with employment. Under the **Employer Job (PRSI) Incentive Scheme**, where an employer creates a new job and employs a person who has been unemployed for 6 months or more, the employer will be fully exempted from the liability to pay PRSI for the first year of that employment. The additional employees must constitute a net increase in their workforce above that applying in the previous 3 months. As such the scheme is designed to actively encourage the creation of new employment.

Access to Finance for SMEs:

Bank Recapitalisation Scheme

The Bank Recapitalisation Scheme for the Bank of Ireland and Allied Irish Bank contains a number of explicit provisions directed at supporting SMEs and entrepreneurs including:

- Both banks will be required to make available more than €3 billion in new SME lending, to include working capital, in 2010 and 2011.

- The establishment of a €100m environmental, clean energy and innovation fund by each participating bank.
- The contribution of a further €20m by each bank to new or existing seed capital funds, and the introduction of the banks' Code of Conduct on Business Lending to SMEs.
- Commitment of resources to work with Enterprise Ireland and the Irish Banking Federation to develop sectoral expertise in the modern growth sectors of the economy.

Under the National Asset Management Agency (NAMA) legislation, participating financial institutions are required to submit detailed lending plans and monthly progress reports to the Minister for Finance to ensure that the banks deliver on the commitments set out in their lending plans.

As part of the Recapitalisation Scheme the Government also established the Credit Supply Clearing Group with bank, business and State representation. Chaired by the Department of Enterprise, Trade & Innovation, the Group is responsible for identifying patterns of events where the flow of credit to viable businesses appears to be blocked and for seeking to identify credit supply solutions relating to these patterns.

Credit Review Office

The legislation establishing the NAMA issues guidelines to all banks participating in NAMA who have an SME business, to ensure that SMEs, sole traders and farm enterprises will have recourse to an independent, external review of decisions of credit refusal by the banks. It is hoped that banks not participating in NAMA or covered by the Government guarantee will also decide to join the review system.

The Credit Review Office has been established to facilitate the appeals process³⁸⁵. The banks must comply with the recommendations of the appeal process, or explain satisfactorily why they cannot do so. In addition to dealing with individual cases, the credit review system will examine the credit policies and practices of the banks for all SME sectors. It will pay particular attention to sectors, such as the retail sector including car dealerships, tourism, and agriculture where particular stresses have been reported.

The first quarterly report of the Credit Review Office noted that six reviews were completed between April and June 2010 and a further five are in progress³⁸⁶.

Relationship with Banks

Since late 2008, Enterprise Ireland has built relationships with the main banking institutions used by Enterprise Ireland clients (Bank of Ireland, Allied Irish Bank and Ulster Bank) in order to ensure client access to finance. There has also been a series of exchanges, including secondments, which seek to share with the banks, the development agencies understanding of new growth markets and sectors.

Government Payments to Suppliers

The Government has introduced formal arrangements to reduce the payment period by central Government Departments to their business suppliers from 30 to 15 calendar days. This commitment has an effect on all valid invoices received on and from 15 June 2009 and

³⁸⁵ Enterprise Ireland is providing initial administrative support for the Credit Review Office

³⁸⁶ Quarterly Report from John Trethowan Credit Reviewer - lending to SMEs, Department of Finance, 2010

is helping cash flow difficulties for enterprises. Prompt payment returns data for Quarter 1 2010 shows that 86.6 percent of the total payments made by Government Departments within 30 days, were paid within the 15 day time frame³⁸⁷.

The Innovation Fund

A new venture fund of up to €500 million - the Innovation Fund - is being established to increase the availability of capital for small R&D based companies. The fund is part of a series of measures including new tax provisions and the Seed and Venture Capital Scheme 2007-2012 which have been designed to encourage strong venture capital activity in Ireland.

³⁸⁷ Prompt Payment Returns, Q1 2010, Department of Enterprise, Trade and Innovation, 2010

Appendix VII

The Enterprise Development Agencies³⁸⁸ - Core Focus

IDA Ireland is responsible for attracting inward investment and working with existing multinational subsidiaries based in Ireland. It also develops and manages a range of high quality serviced business and technology parks located nationwide which are promoted to agency clients.

Through a focus on ‘Ten Steps of Transformation,’ IDA Ireland’s strategy, Horizon 2020, aims to maintain and support existing employment and deliver 640 new investments over the 2010-2014 period. The Agency also aims to secure at least 50 percent of investments to locations outside of Dublin and Cork and will expand its global reach targeting 20 percent of green-field investments originating from high-growth emerging markets by 2014.

Enterprise Ireland is responsible for the promotion and development of indigenous industry and exports (and overseas food/drinks companies seeking to grow). Its activities are focused in four key areas: maintaining and winning new sales; driving lean manufacturing and competitiveness; promoting innovation, commercialisation & R&D; and developing new start-up companies and fostering entrepreneurship. Its strategy is designed to ensure that opportunities for Irish enterprises and entrepreneurs are maximised throughout all regions.

Science Foundation Ireland (SFI) promotes investment in oriented basic research in the fields of biotechnology, ICT, and energy efficient technologies. It aims to develop Ireland’s research and development capability and capacity through investments in academic researchers and research teams, and attracting world class research teams and individuals with a view to their carrying out oriented basic research in the State. Through initiatives such as Centres for Science, Engineering and Technology (CSETs), SFI promotes academic-industry research collaboration.

City & County Enterprise Boards (CEBs) have primary responsibility for the delivery of State support to the indigenous micro-enterprise sector, i.e. businesses which employ 10 people or less. Through both financial and non-financial assistance, the CEBs support enterprises in the start-up and expansion phases and stimulate entrepreneurial activity at local level (including schools). Priority is given to manufacturing or internationally traded services activities or domestically traded services businesses with the potential to trade internationally and to create new direct employment.

Shannon Development promotes tourism and economic development in the Shannon region. It develops property solutions in the Shannon region for foreign and indigenous industry.

Forfás is Ireland’s policy advisory board for enterprise, trade, science, technology, and innovation. It provides independent and rigorous research, advice and support in the areas of enterprise and science policy. This work informs the Department of Enterprise, Trade and Innovation and wider Government in their responses to the fast-changing needs of the global business environment.

³⁸⁸ Beyond the agencies under the aegis of DETI included here, there are a number of other government bodies and agencies with an enterprise development remit focused on particular sectors (including Bord Bia, Bord Iascaigh Mhara, Bord Fáilte, Irish Film Board, Marine Institute), and geographical areas (Údarás na Gaeltachta, Western Development Commission)

Appendix VIII

Sectors Economic Contribution

Sector Categorisation		Empl. 2009 '000's	% Change 04-09	Exports 2009 €billion	% Change 04-09
Building on Strengths	ICT	53.9	15.6	30.3	6.5
	Pharma/Bio (includes chemicals)	30.2	-5.6	47.2	26.1
	Medical Technologies	24.4	12	6.4	13.7
	International Financial Services	24.6 ³⁸⁹	26.2	13.2	9.1
	Agri-Food	49.9	-8.9	7.3	4.4
	Int'l Trading Business Services	11.9 ³⁹⁰	25	25.6	170.6
	Sub-total	194.9	-	130.0	-
A Renewed Focus on Mature Sectors	Tourism & Hospitality ³⁹¹	120.5	-2.2	3.5	-1
	Retail & Wholesale	265.6	-5	n/a	n/a
	Construction	136.7	-35.6	.11	10.8
	Transport, Logistics & Distribution (incl. semi-state)	93.1	0.4	2.9	54
	Sub-total	615.9	-	6.5	-
Emerging Opportunities & Untapped Potential	Green Enterprise ³⁹²	6.5	n/a	2.8	n/a
	Creative Industries	68	11	n/a ³⁹³	n/a
	Marine/Maritime ³⁹⁴	17	n/a	0.8	n/a
	Private Healthcare Services ³⁹⁵	122.7	49.1	n/a	n/a
	Private Education Services	50.8 ³⁹⁶	82.7	n/a	n/a
	Sub-total	265.0	-	3.6	-
	Other ³⁹⁷	496.4	-	n/a	-
	Public Sector	315.5	-	-	-
	Grand Total	1,887.7	-	150.0	-

Note: Economy-wide sectoral enterprise data comes from various sources, is often not readily compatible in terms of sector categorisations and/or time periods, and may represent only certain portions or samples of the overall activity base. An added complication is capturing on-going sector dynamics and the changing character of the enterprise base within the confines of existing database classification systems. As such the above table provides an indicative cross-sectoral view and data sources and associated caveats are contained in the footnotes as appropriate. All data is sourced from CSO unless otherwise stated - 'n/a' = not available

³⁸⁹ Employment data from the Finance Dublin Yearbook 2010

³⁹⁰ Annual Employment Survey, Forfás, 2009 - used as a proxy for Internationally Traded Business Services

³⁹¹ Employment in hotels, restaurants, bars, canteens and catering

³⁹² Environmental Goods & Services on the Island of Ireland, Forfás/InterTradelreland, 2008

³⁹³ Exports from the creative industries are captured under other CSO sector headings

³⁹⁴ Report on the State of Ireland's Marine Economy, SEMRU/ NUIG, forthcoming

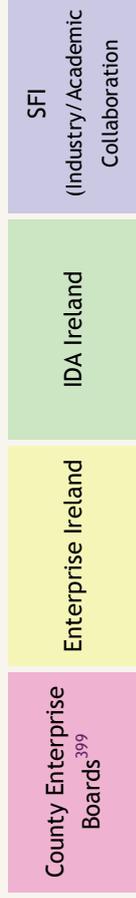
³⁹⁵ Based on total healthcare employment in the State less HSE employment

³⁹⁶ Data for private education services is total education employment less public sector education

³⁹⁷ Includes other manufacturing and primary production and other services (primarily locally traded)

Appendix IX

Firm Level Enterprise Agency Supports³⁹⁸



1. Entrepreneurship, new company start-ups, micro-firms

Category	Initiative	Description	Agency
Information /Advice/Referral	First stop shop - information services	CEBs have developed a range of information services that they can provide directly, or refer clients. Enterprise Ireland has a network of regional offices.	
	EnterpriseStart Workshops	EnterpriseStart workshops help individuals with business ideas to understand and evaluate the entrepreneurship process, what it involves and where to get support.	
Training/Business Guidance	Enterprise Platform Programme	A one year full-time professional training and enterprise support programme aimed at the needs of entrepreneurs in a business start-up situation. Run by the HEIs the programme provides formal business education, personal development, business mentoring and business guidance.	

³⁹⁸ The information provided here is in short summary form and is intended only as a guide to the supports provided by the Enterprise Agencies. Further information, including relevant eligibility criteria, can be obtained directly from the individual enterprise agencies

³⁹⁹ Each of the CEBs is a limited company and the suite of supports provided by them may vary depending on particular locational needs and demand

Category	Initiative	Description	Agency
Financial Supports for Micro-Enterprises	One to One Business Mentoring	Provides micro-enterprises with an experienced business mentor on business issues such as Financial Planning, Marketing, Sales, People Management and Developing Export Markets. Some CEBs charge a small fee to access the mentoring service.	
	Business Diagnostic and Specific Skills Training	A mix of work-shops, seminars, mentoring services and accredited training programmes geared towards meeting specific business needs (varies between the CEBs).	
	Priming Grant	Awarded within the first eighteen months of setting up the business.	
Incubation Space	Business Expansion Grant	Awarded in the growth phase, after the initial 18 month start-up period.	
	Feasibility/ Innovation Grant	Assists eligible businesses to assess market demand for product/service and examine its sustainability.	
	Community Enterprise Centres (CECs)	CECs provide space and a supportive environment for new business start-ups and help the development of entrepreneurship locally in urban and rural locations. Enterprise Ireland works in close cooperation with FÁS, the local authorities, the CEBs and the CDBs, where relevant, in implementing this initiative.	
High Potential Start-Ups (HPSUs)	Campus Incubation Centres	The Campus Incubation programme has supported development of Incubation Centres within HEIs providing space and support to entrepreneurs who want to develop their technology based business within the supportive structure of a 3 rd level college campus.	
	HPSU Feasibility Study Grant	To assist a new start-up company or individual entrepreneur to investigate the viability of a new export orientated business or proposition.	
	Innovative HPSU Fund	The Innovative HPSU Fund allows Enterprise Ireland to offer equity investment to HPSU Clients similar to a Venture Capital (VC) approach. Investment is on the basis of an overall business plan.	

Category	Initiative	Description	Agency
Venture Capital	Developing the VC environment in Ireland	Enterprise Ireland is working to increase the availability of VC funds in the Irish market and to transform the VC market with other stakeholders.	
Enterprise Awards	Various Enterprise Competitions and Awards	To stimulate entrepreneurship and to promote ambition and good practice, the agencies highlight exemplar business achievements through various awards initiatives, for example: <i>Student Enterprise Awards</i> ; <i>CEB National Enterprise Awards</i> ; <i>EI and Irish Internet Association Net Visionary Awards</i> ; <i>Enterprise Ireland One to Watch Award</i> for research with business potential.	

2. Export Development and Growth

Category	Initiative	Description	Agency
Strategy/Planning	Going Global	The Going Global Fund is focused on locally trading companies that have successfully established businesses in Ireland, and wish to explore opportunities to internationalise.	
	First Flight Programme	Helps firms to develop a detailed export development plan. A Mentor can be assigned to assist the company with the self-assessment process and work with them in developing action plans for specific export markets.	
	Business Accelerator Programme	The Business Accelerator Programme connects individual Irish client companies with an in-market Business Accelerator, i.e. an industry expert within a specific sector and market, with the experience, knowledge and contacts to support the company's expansion and development into an export market.	

Category	Initiative	Description	Agency
	Developing Market Entry Strategies	One-to-one meetings with clients on developing: a market entry strategy; researching market and competitor intelligence; indicating opportunities; undertaking product benchmarking; sourcing agents and distributors. Other services are delivered through overseas offices, seminars and incubator facilities.	
In-market Support/ Information/Advice	Enterprise Ireland Overseas Office Network	Enterprise Ireland's overseas network of 33 offices engage with companies at an early stage to provide assistance to achieve the first sale reference site, accelerating the 'route to market', including seminars on 'preparing for markets'. Enterprise Ireland has incubator units in Europe, the United States and Asia that provide an office facility, networking benefits and hands-on support.	
	Trade Fairs/Trade Missions	Financial assistance is available to encourage SMEs to disseminate information about their products and to obtain market data on their industries by participating in trade fairs and exhibitions.	
	Introductions to Third Party Services	Introductions to third party professional services to help with local issues such as legal, recruitment, funding, M&A, debt collection and PR/advertising.	
Skills Development	Graduate Placement Programme	A 12 month graduate training programme - graduates spend a minimum of 6 months outside of Ireland.	
	Excel at Export Selling Workshops	Aimed at rapidly embedding the proven tools of good international selling practice into the sales teams of companies across all industry sectors.	
	International Selling Programme	Offered in partnership with DIT and designed to equip Irish companies with the necessary tools to reach their export sales potential in global markets.	
	Skill development supports	Support for clients to develop skills in the area of market-led development of products and services and productivity growth.	

Category	Initiative	Description	Agency
	Market development skills	Supports the market development skills of companies, providing support towards internal costs incurred when researching new markets for products and services.	
	Transform Programme	Management and Strategy skills development programme, in collaboration with the Irish Management Institute, and targeted at owners, managing directors and senior management teams in client companies.	
Sustainability	Enterprise Stabilisation Fund	Aims to help viable but vulnerable internationally trading companies to survive the current global downturn by supporting their drive to reduce costs and gain sales in overseas markets and to sustain employment. Particular attention is being paid to supporting viable small and medium sized enterprises engaged in exporting.	

3. Business Transformation & Expansion

Category	Initiative	Description	Agency
Strategy Development	Mentor Network	The Enterprise Ireland Mentor Network was established to help companies identify and overcome obstacles to growth. Mentors are senior executives, drawn from the private sector, with a proven track record in business.	
	Development Advisors/Project Executives	Enterprise Agency personnel assigned to individual client companies providing information and advice on enterprise supports aligned with business development objectives.	
	Strategic consultancy grant	Supports efforts to improve the strategic capability of manufacturing or international services companies by encouraging the engagement of outside consultants to assist in the development and implementation of strategic initiatives.	

Category	Initiative	Description	Agency
	New Market Research Programme	Support towards researching new products and new markets. The objective of the programme is to support 100 clients at various stages of development who are investigating new opportunities and have the ambition/capability to deliver results in new markets.	
Management Development	Leadership 4 Growth Programme	Leadership 4 Growth aims to develop and enhance the leadership ambition, mindset and capability of Irish CEOs and their senior management teams.	
	The Internet Growth Acceleration Programme	The Internet Growth Acceleration Programme (iGAP) is an intensive management development programme aimed exclusively at high potential internet companies. Ongoing support will also be available from Irish internet entrepreneurs from the Internet Growth Alliance who will act as business advisors. This programme is open to Enterprise Ireland clients and non-clients with export potential.	
	Propel Programme	Entrepreneurship development programme run over 10 months designed to provide ICT and Life Sciences entrepreneurs with the necessary business skills, expertise, contacts, networks and facilities to establish successful global businesses.	
	Recruitment of a Key person/ Manager	Provides partial funding (for one year) towards the cost of recruiting a new Key Manager/employee with skills that are critical for the development of its business.	
Business Expansion/New Investments	Job Expansion Fund	Assists Enterprise Ireland client companies to achieve increased employment through increased sales and international trade.	
	Tailored Company Expansion Package	The funding package is negotiated on a one-to-one basis and funding for training/management development, R&D, capital assets and job creation can be supported.	
	Capital Grant	Support towards cost of buildings, building modifications, new machinery & equipment.	
	Employment Grant	Provides support towards the cost of hiring additional employees.	

Category	Initiative	Description	Agency
Supports for Productivity Enhancement (incl. Energy Efficiency & Environment)	Competitiveness Benchmarking Initiative	Company Health Check services which identifies how competitive a company is across a range of business functions and metrics including profitability, marketing, operations, innovation, productivity and human resources.	
	Lean Business Offer	The Lean Business Offer aims to encourage clients to adopt and embed lean business principles in their organisation, aiming to enhance productivity and competitiveness.	
	eBusiness Management Initiative	To improve the eBusiness/ ICT Management capability of SME clients through action based learning. Consultants/ Trainers will work one-to-one with successful applicants to plan and implement eBusiness projects in their companies.	
	Applied Innovation Assignments	A structured programme to assist a company in applying innovation practices and tools to achieve continuous improvements in business performance.	
	Build a Green and Sustainable Business	Helps companies to incorporate sustainable practices into the day to day running of the business. Enterprise Ireland manages an information portal www.envirocentre.ie designed to enhance environmental awareness and improve performance in Irish industry.	
	Green Tech Offer	Environmentally Superior Products Initiative; Carbon Management/Reduction Initiative; Eco-labels Initiative; and Environmental Standards.	
	Environmental Aid Scheme	Financial supports for: High efficiency Co-generation (CHP) installations; Promotion of Renewable Energy Sources; Energy Saving Measures & Environmental Protection.	

4. Supports for In-firm R&D and Innovation and Industry/Academic Research Collaboration

Category	Initiative	Description	Agency
Information/Advice	R&D Advocates and Awareness Programme	A series of R&D awareness programmes are carried out throughout the country to ensure that companies are made aware of the benefits of engaging with R&D.	
	Intellectual Property Advice	Advice on the protection, development and commercialisation of patentable technology and also includes financial assistance with patenting.	
	Technology Road Maps	Events for developing the national dialogue on international technology trends where industry experts from global companies share their views on the latest developments and opportunities in their fields.	
	Technology Transfer Offices (TTOs)	Specifically tasked with promoting the commercialisation of HEI research into Irish based enterprises and new spin out companies. Ten TTOs have been established within HEIs to date and a Technology Transfer Strengthening initiative is underway to expand the initiative including the recruitment of key TTO professionals.	
	R&D Funding	Financial supports for small and large-scale product, process or service R&D projects and stimulation grants to assist companies not involved in R&D activities to investigate the potential for an R&D project.	
Direct Financial Supports	Innovation Voucher Scheme	The scheme provides funding towards collaborating with HEIs to explore business opportunities or address problems. It is open to all SMEs.	
	Telecom Standards Initiative	Financial support provided to companies in the internet, telecommunications and mobile sectors to facilitate their participation in standards activities.	
	Commercialisation Fund	Grant assistance to bring new product idea/business ventures originating in HEIs to market.	
	FP7 Feasibility Support Scheme	Enterprise Ireland is lead agency in the Irish support network for FP7 and provides financial supports for FP7 participants based in Ireland. Companies interested in developing an FP7	

Category	Initiative	Description	Agency
		collaborative research project with other European partners can apply for a feasibility grant towards the cost of preparing an FP7 proposal.	
Academic/Industry Research Collaboration	Innovation Partnership Grants	Encourages Irish based companies to work with Irish HEIs to access their expertise and resources to develop new and improved products, processes, services, and generate new knowledge and know-how. Projects are managed by the participating third level research institution.	
	Competence Centres	Competence Centres are collaborative entities established and led by industry that are resourced by highly-qualified researchers associated with research institutions who are empowered to undertake market focused strategic R&D for the benefit of industry.	
	Centres for Science Engineering and Technology (CSETs)	Funding for scientists to drive collaborative internationally competitive research clusters allied to industry. SFI and Enterprise Ireland are working together to help develop greater linkages between MNCs and SMEs associated with each CSET.	
	Industry Research Partnership Supplements	To facilitate greater interaction with industrial partners, encourage industry research activity and enhance the generation of new applied technologies.	
	Strategic Research Cluster Programme (SRC)	The SRC programme links scientists and engineers across academia and industry to address research questions and foster the development of new and existing Irish based technology companies.	
	Industry Led Research Programmes	Enterprise Ireland and a number of industry sector groups are working to stimulate Industry Led Research Programmes (ILRPs) in Irish Colleges. The programme aims to solve technical challenges faced by industry in Ireland.	
	Applied Research Enhancement Centres (ARE)	ARE centres have been established within IoTs to carry out research with industry partners in the areas of ICT & Software, Bio Life Sciences & Pharmaceutical, and Bio-Medical Devices & Materials.	

Category	Initiative	Description	Agency
	US -Ireland R&D Partnership Programme	Links US & Irish scientists and engineers across academia/industry to foster new and existing research activity and expand educational and research career opportunities in science and engineering (Nanotechnology, Diabetes, Sensors and Cystic Fibrosis).	
	Health Research Board /SFI Translational Research Award	Supports the focus of resources in areas which offer the greatest potential for translation into impacts and benefits for health and long term economic development	

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