

Innovation in Ireland



An Roinn Fiontar, Trádála agus Fostaíochta
Department of Enterprise, Trade and Employment

innovation is the creative process of exploiting new ideas



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Innovation in Ireland

Foreword



Mary Coughlan

Ireland's ambition is to become a leader in innovation. Our goal is to develop an innovation-driven economy that maintains competitive advantage and increases productivity. We wish to promote innovation across a broad spectrum. Innovation has no policy borders. To stay ahead, we must continue to deliver consumer-driven innovative products and services as well as further developing new business models, new organisational structures and skills for innovation.

The publication of this Innovation Policy Statement, *Innovation in Ireland*, marks our progress to date. The Statement also explores opportunities where innovation can be better exploited. We have identified ten key policy areas that underpin the Government's approach to innovation in support of the knowledge economy and enterprise. The Statement also provides a reference point and wider context for implementation of the *Strategy for Science, Technology and Innovation 2006-2013* and charts the main components of our national innovation system.

We have already made substantial progress in implementing this Strategy. However, emerging sectors where innovation can be better exploited include services and public procurement and these two areas will be given additional focus.

While learning from good practices elsewhere and benchmarking ourselves against the best in the world is important, we also have the dynamism to generate our own ideas and innovations. Our strategies on skills, science, technology and innovation will, we believe, provide a framework in which we bring the skills of the future into today's workplace.

We must continue to play to our strengths by continuing to tap into our innate ability to build relationships and to foster innovative partnerships and business networks both at home and abroad. We believe that by creating the right policy framework conditions for supporting and sustaining innovation, we can maintain our competitive advantage and sustain our economic performance into the future.



Dr Jimmy Devins

Mary Coughlan, TD

Tánaiste and Minister for Enterprise,
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Introduction: *The Challenge of Innovation*

Pursuing our ambition

Ireland is recognised internationally as a stable and progressive society and as one of the most desirable places in which to grow a business, develop a career and live a rewarding life. Global challenges posed by demographic and environmental issues present enormous possibilities for those who approach them with creativity and ingenuity.

We are responding to these challenges, not only by providing capital investment through the *Strategy for Science, Technology and Innovation* and other initiatives, but also by ensuring that Ireland is equipped with the best education, training, entrepreneurial supports and a conducive regulatory framework. For enterprise, the aim is to create and apply technology innovation in products, services and business processes. Success, however, does not depend on Government and policy alone. It requires a joint commitment by enterprise, society and Government to promote innovation in every sphere of business and public service. The Government is working to create a sustainable advantage based on Ireland's reservoir of skills, human capital and flexibility in serving markets. For Ireland in the 21st century, competitiveness will depend on merging these attributes with flair and a commitment to innovation that is unmatched by competing economies.

In short, our ambition is to put innovation at the core of our policies and strategies for the future, so that Ireland becomes a leader in innovation.

What is innovation and why is it important?

Innovation is the creative process of exploiting new ideas. A more complex definition describes innovation as the exploitation of new ideas in pursuit of a competitive advantage, including the development of new or enhanced products and services and the introduction of new business models, new organisational structures or new work practices.

While innovation has traditionally been seen as technology-led, it is today seen in a broader context. The EU recognises the need to raise the levels of innovation across both the technological and non-technological arenas. In December 2006, the EU Competitiveness Council adopted a broad-based innovation strategy as an integral part of the EU's Competitiveness programme.

Rather than being based necessarily on major breakthroughs, business innovation is often incremental and built on the day-to-day expertise of employees and their thorough knowledge of customers and competitors. For them, innovation may be about making non-technical adjustments that have significant customer impact with correspondingly little cost.

New thinking and policies on services innovation are being developed. Many services firms serving international markets from Ireland, for example, have been particularly successful in adopting innovative approaches to servicing international supply chains.

Innovation and public policy

While enterprises and individuals are the primary sources of innovation, public policy can establish the right framework conditions for innovation to flourish. The State has already committed €8.2 billion to implementing the *Strategy for Science, Technology and Innovation*.

In May 2008, the Government appointed Dr Jimmy Devins, TD as the Minister for Science, Technology, and Innovation at the Department of Enterprise, Trade and Employment and the Department of Education and Science. This new political emphasis underpins the determination with which Ireland is pursuing its ambition to become a world leader in innovation. In this Innovation Policy Statement we identify ten key policy areas where innovation will be exploited in support of enterprise and the knowledge economy.

This Document is underpinned by a detailed Framework Document, entitled: *Innovation in Ireland: Policy Statement*, which is available on our website **www.entemp.ie**.

1

Knowledge creation

**Building a
world-class
research system**



The Government recognises the value that investment in research, development and innovation represents, both to maintain economic competitiveness and to improve living standards. This is clearly reflected in the Social Partnership Agreement, *Towards 2016*, and in the current Programme for Government. The *National Development Plan 2007–2013* and the *Strategy for Science, Technology and Innovation 2006–2013* set out the Government's targets in relation to science, technology and innovation and the mechanisms for achieving them.

National Development Plan 2007–2013

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Over the lifetime of the *National Development Plan 2007–2013* the Government will invest €8.2 billion in initiatives designed to enhance human capital, physical infrastructure and commercialisation related to science, technology and innovation.

Most of this investment will go towards the implementation of the *Strategy for Science, Technology and Innovation 2006–2013*.

Strategy for Science, Technology and Innovation

The *Strategy for Science, Technology and Innovation 2006–2013*, launched by the Government in May 2006, will bring Ireland into line with R&D performance in leading countries and will enhance the development of a knowledge-based economy.

Main aims of the Strategy for Science, Technology & Innovation

Academic research	<p>Significantly increase the number of research teams led by internationally competitive Principal Investigators;</p> <p>Upgrade existing research infrastructure and develop new facilities;</p> <p>Develop sustainable career paths for researchers;</p> <p>Enhance the mobility of researchers; and</p> <p>Double the number of PhD graduates in science, engineering and technology to nearly one thousand per annum by 2013.</p>
Graduate schools	<p>Establish a number of graduate schools to provide high-quality training of researchers, and equip them with generic and transferable professional skills that are relevant to a modern knowledge-based enterprise economy; and</p> <p>Accommodate industrial placements to facilitate development of enterprise expertise.</p>
Commercialisation	<p>Increase outputs of economically relevant knowledge, know-how and patents from third-level institutions; and</p> <p>Strengthen the Intellectual Property/ Commercialisation functions within Higher Education Institutes and provide them with expertise to translate research into applications.</p>
Industrial research	<p>Transform the quality and quantity of research undertaken by enterprise – both directly and in cooperation with third-level institutions;</p> <p>Grow business annual expenditure on R&D from €1 billion in 2003 to €2.5 billion by 2013; and</p> <p>Develop a number of industry-led research-driven Competence Centres with research facilities in third-level institutes.</p>
Sectoral research	<p>Enhance the contribution of research to economic and social development across all relevant areas of public policy; and</p> <p>Provide a competitive fund to encourage excellent research in areas of social, economic or environmental need, such as sustainable agriculture, treatment of specific medical conditions, and energy security.</p>
Public awareness	<p>Increase public awareness and appreciation of the role of science in society, with a particular focus on schoolchildren and those that influence them; and</p> <p>Increase the number of schoolchildren taking science subjects.</p>
Cross-border and international cooperation	<p>Increase international cooperation in science and technology and participation in transnational research activity; and</p> <p>Encourage Irish researchers to collaborate internationally and to avail of EU Framework Programme funding. Leverage complementary strengths in institutions and enterprises in Ireland and Northern Ireland through increased cross-border cooperation.</p>

EU dimension

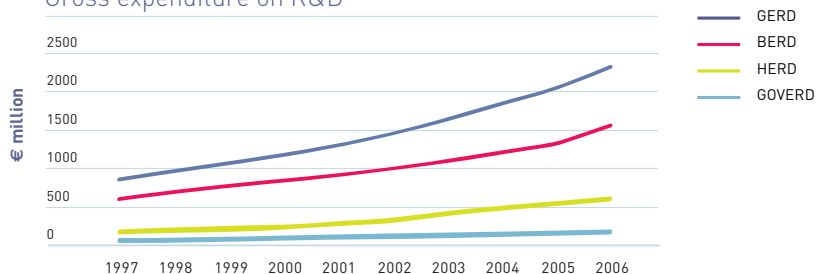
The European Union is also committed to increasing the quality and quantity of research carried out in Europe – the Lisbon Strategy set a target of 3 percent of EU GDP for research investment. The Commission's Green Paper on the European Research Area is closely aligned with Ireland's *Strategy for Science, Technology and Innovation 2006–2013* in terms of priorities and proposed mechanisms; activities at EU level will make a substantial contribution to the achievement of Ireland's goals.

R&D expenditure

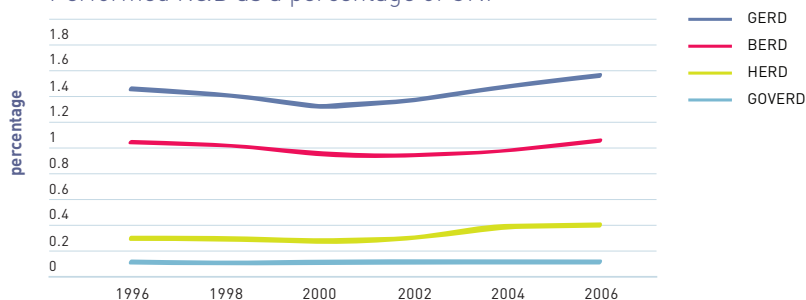
Gross expenditure on R&D (GERD) across all sectors of the economy reached €2.33 billion in 2006, representing 1.56 percent of GNP. Between 2004 and 2006, the increase in nominal terms amounted to 26 percent. Business expenditure on R&D (BERD) made a particularly strong contribution in this respect, rising by over 25 percent in the two years up to 2006 and reflecting a robust R&D spending performance by both Irish and foreign-owned firms.

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Gross expenditure on R&D



Performed R&D as a percentage of GNP



Attracting researchers

The rapid growth in research activity envisaged in the *Strategy for Science, Technology and Innovation 2006–2013* requires a supply of suitably educated, high-quality people – a supply that cannot be met by the education system alone: suitably qualified researchers will have to be attracted to Ireland from abroad. Efforts to do this have already yielded results: in 2006, 15.5 percent of Ireland's science and technology employees aged between 25 and 64 were born outside Ireland, compared with an EU27 average of 9.7 percent.

In support of these efforts, regulatory barriers have been adapted: the Government has transposed the EC Directive on Mobility of Researchers from Third Countries into Irish law, enabling research organisations to bring researchers in from countries outside the EU, and allowing the spouses and dependants of these researchers to apply for work permits and, ultimately, permanent residency. The Government also provides funding for attracting researchers into Ireland through Science Foundation Ireland and the Programme for Research in Third-Level Institutions.

The Advisory Council for Science, Technology and Innovation is currently examining ways in which research careers may be made more attractive, and it is expected to identify further measures that will entice leading foreign researchers to work in Ireland.

The Principal Investigator Programme, administered by Science Foundation Ireland, provides financial support for lead academic researchers and project leaders, their associated research staff, equipment and expenses in targeted fields of science, technology and engineering.



2

Knowledge Transfer

From research to the marketplace

One of the most important assets in Ireland's innovation system – and vital in a small economy with limited resources – is the quality of the public research infrastructure and its links to industry. Strengthening links between our research infrastructures and industry and transferring knowledge to the marketplace remain key goals of our innovation strategy.

In this context, the enterprise development agencies are addressing two issues:

- **The capacity of small and medium-sized enterprises to absorb and apply research and new knowledge; and**
- **The increasing demand from enterprise for readily accessible applied research capabilities.**

Higher Education–Industry linkages

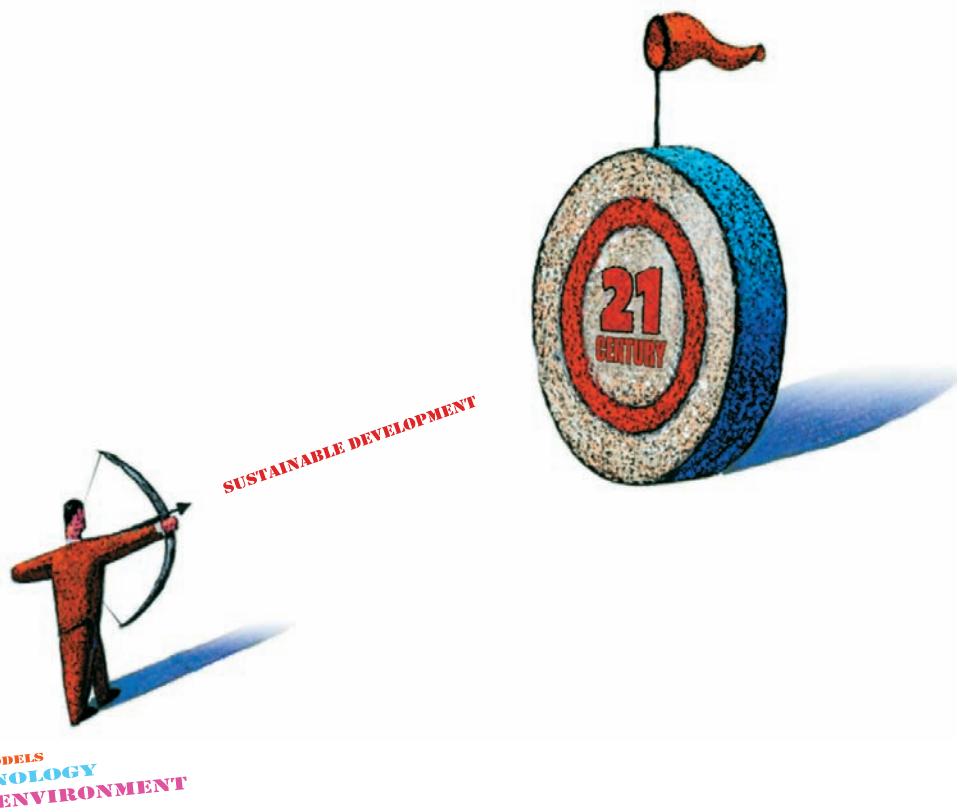
We are supporting a number of specific initiatives to develop these vital links between higher education and enterprise.

Examples are:

- **The establishment of SFI Centres for Science, Engineering and Technology with the aim of significantly advancing knowledge and exploiting opportunities for discovery and innovation – these Centres involve research partnerships between Irish universities, leading multinational companies and SMEs.**
- **Support for linking researchers in academia and industry within Strategic Research Clusters that focus on specific aspects of the ICT and biotechnology industry roadmaps.**



- Significantly increased support for Technology Transfer Offices in third-level institutes to ensure better economic returns from R&D investment – these offices work with the researchers to identify commercial opportunities, negotiate with enterprises, and protect and manage intellectual property.
- The provision of Innovation Vouchers that enable businesses to collaborate with higher education 'knowledge providers' to obtain an innovative solution to an enterprise need – these vouchers offer SMEs the opportunity to forge new relationships with higher education institutions and, ultimately, to develop new products and services.



Building knowledge partnerships

Our development agencies are fully attuned to keeping innovation at the core of their strategies and policies. Enterprise Ireland – the agency charged with the development of indigenous industry – provides significant funding for R&D projects and investment in new R&D facilities through the R&D Advocate programme, the Innovation Management scheme, and the Innovation Partnerships initiative. It also works with companies to raise their awareness of the importance of R&D in the sustainability of the enterprise, and to support them in their early stages of R&D.

Enterprise Ireland is also very active in fostering collaboration between the academic and enterprise communities, and in helping companies to forge active relationships with suitable research partners. It works closely with the research institutions to ensure that intellectual property arising from publicly funded research is protected and exploited commercially, so that it delivers optimal returns to the Irish economy.

Enterprise Ireland coordinates Irish participation in the EU Framework Programmes, and has appointed a national director to ensure a coherent and optimised approach. A key objective is to ensure that funding from *Europe's Seventh Framework Programme for research and technology development (FP7)* is relevant to Irish researchers and that it complements the existing R&D and innovation strategies for enterprise in Ireland.

The **Tyndall National Institute** was established in 2004 as a focal point for information and communications technology research activities in support of industry and academia. The Institute has special expertise in photonics, electronics, materials and nanotechnologies, and their applications in life sciences, communications, power electronics and other industries.

FUSION is an ongoing all-island network managed by InterTradelreland, one of six North-South Implementation bodies, that supports business innovation and increased capability by developing and facilitating partnerships and projects between businesses, higher education institutions and graduates.

Initiatives stimulating research by industry

We are encouraging the exploitation of research by industry through several other initiatives:

- ■ Enterprise-led Competence Centres are being set up with highly qualified researchers to undertake strategic market-focused R&D for the benefit of industry;
- ■ A Research and Development Fund is available to support R&D in enterprises. It offers up to 45 percent funding for R&D activities (or 50 percent if the activity is collaborative);
- ■ Research and Development Stimulation Grants are available to enable small companies to develop their innovation capability and absorptive capacity; and
- ■ The EU-supported Innovation Relay Centres connect businesses with solution providers in 33 countries.

3

Skills Development

**Lifelong learning
and the National
Skills Strategy**

Ireland's ability to build and sustain its innovation capacity depends on developing and maintaining our skills at world-class levels, and on high-quality, continuous education. Individuals need to respond to the increasing pressures of globalisation by embracing a culture of lifelong learning and employability; firms have to respond by improving and sustaining training opportunities.

The current Social Partnership Agreement, *Towards 2016*, recognises this need, from both an economic and a social perspective. Better skilled and better educated employees are good for the economy as a whole and for the firms that employ them. They also command higher salaries and enjoy a better quality of life. The agreement envisages a concerted effort by employees and employers to increase levels of workplace learning and upskilling.

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Lifelong learning

Education and training can no longer be seen as a phase that individuals go through before their career starts; it must be integrated into career development, and continue throughout the working life. Adult and Further Education Programmes are targeted at providing second-chance education opportunities and training designed for early school leavers and others who are educationally disadvantaged or lack basic skills. The National Training Fund will provide opportunities for people already in employment to be given improved access to training, opportunities to develop new skills, acquire recognised qualifications and continually progress to higher-level qualifications.

The Minister of State with special responsibility for lifelong learning, Sean Haughey, TD, coordinates the lifelong learning agenda across both the Departments of Enterprise, Trade and Employment and Education and Science. The Minister chairs a new Inter-Departmental Committee to oversee implementation of the *National Skills Strategy* whose task is to produce an implementation plan in the Summer 2008.

The National Framework of Qualifications

Continuously updating the skills of our workforce in a knowledge economy requires a flexible framework, robust enough to respond to the needs of the economy, and, at the same time, provide authoritative accreditation of qualifications in which all stakeholders can have confidence. The National Framework of Qualifications (NFQ) provides a single unified framework with the potential to cover all awards in the State. It recognises learning in formal, non formal, workplace and community settings, and is designed to ensure access, transfer and progression for learners. Over time, as similar developments take hold in other Member States, the European Qualifications Framework (EQF) will enable the levels of qualifications within various countries to be aligned within a meta-framework.

National Skills Strategy to 2020

The Expert Group on Future Skills Needs report, *Tomorrows Skills: Towards a National Skills Strategy* sets out a vision of Ireland in 2020 in which a well-educated and highly skilled population contributes to a competitive, innovation-driven, knowledge-based economy.

In order to make this vision a reality, the report sets a number of objectives:

- **Upskilling 500,000 people in employment by at least one National Framework of Qualifications level;**
- **Increasing the participation rate in upper secondary education to 90 percent; and**
- **Increasing the progression rate to third level from 55 to 70 percent.**

The Government is fully committed to the achievement of these ambitious targets, and has built them into the *National Development Plan 2007–2013*. The *National Skills Strategy* complements the *Strategy for Science, Technology and Innovation, 2006–2013*.

Skills development measures

A number of measures are being taken to implement the *National Skills Strategy*, including:

- ■ Improved career guidance for those in employment;
- ■ Promoting the recognition of prior learning and accreditation for skills acquired outside the formal learning environment; and
- ■ Targeting of specific groups for skills development, through analysis of sectoral and occupational groupings.

Government funding for upskilling those in employment has increased significantly in recent years, from €8 million in 2004 to €70 million in 2007. Two initiatives which benefited from this investment are:

- ■ The *FÁS One Step Up* programme, which provides financial supports for training employees. It is particularly focused on the needs of people in low-skilled occupations.
- ■ *Skillnets*, which is an enterprise-led support body dedicated to the promotion and facilitation of learning as a key element in sustaining Ireland's national competitiveness. *Skillnets* supports over 150 networks of enterprises in Learning Networks, which are led and managed by the enterprises themselves.

Between them, these two programmes trained approximately 46,500 people in 2006.

We have also provided funding for a strategic alliance between FÁS and several training providers, including Chambers Ireland and the Irish Management Institute, for developing management skills in SMEs.

Recognising that innovative firms require innovative leaders, the Management Development Council (established in 2007) is developing action plans to address gaps in the available management development provisions. It is also working to build appreciation among SMEs of the value of leadership and management skills.

The specific needs of managers in high-technology industries are being addressed by Enterprise Ireland through the Leadership 4 Growth programme, which was developed in consultation with industry and launched in 2006. This intensive programme is delivered at Stanford Graduate School of Business, California.

A number of further mechanisms to accelerate implementation of the National Skills Strategy are currently being investigated, including:

- **The provision of individual learning accounts funded jointly by the State, employers and employees;**
- **Improving arrangements for employee training leave;**
- **Tax incentives; and**
- **Brokerage systems to help companies source appropriate training.**

Innovating through the Structural Funds

Structural funding, and in particular, the European Social Fund (ESF), has always presented opportunities to pilot innovative approaches to upskilling, training and new employment areas. The experimental approach adopted, for example, under the ESF-funded EQUAL Community Initiative, provides a testing ground for new ways of integrating marginalised groups into the workplace and of upskilling those already in employment. It is important that we continue to exploit opportunities for capturing good practices as developed by such pilot projects.

4

Public Procurement

Leverage for innovation



We recognise that public procurement plays a major role in stimulating innovation, and we will exploit opportunities for imaginative procurement practices that promote innovation in the enterprise sector while at the same time delivering better and more efficient public services.

Public procurement in Ireland is conducted within EU regulations that require transparency, competitive tendering and equal treatment of economic operators. Within that framework, contracts are most often awarded on the basis of 'most economically advantageous tender', rather than simply on the lowest price. Selection criteria can encompass 'non-economic' areas of public policy, such as environmental issues, social issues and sustainability. Public bodies can request tenders that provide innovative solutions rather than just basic products or services.

Selling to the public sector is an opportunity for firms, especially SMEs, to demonstrate their capabilities, establish their credibility, and prove the viability of new products or services. In this way, innovation in public procurement can stimulate long-term export success by showcasing emerging and innovative products and services and providing authoritative reference clients for Irish companies. Pre-commercial procurement – where the risks are shared between public procurers and firms – can be used to promote innovation while respecting State Aid rules.

National Public Procurement Policy Framework

To promote public bodies that take a strategic approach to procurement the Department of Finance has developed a National Public Procurement Policy Framework. This enables public bodies to improve their procurement processes and to use procurement as an instrument for implementing other Government policies. We are actively seeking ways to improve SME participation in public procurement, as the size, agility and adaptability of such enterprises often enables them to develop new and more cost-effective solutions.

Eco-innovation, the development of products and processes that contribute to sustainable development, has become an important driver of competitiveness and a key factor in achieving sustainable development. This rapidly growing global market – in which the public sector is the most likely early mover – is open to SMEs with innovative products and services. Public authorities at all levels in Ireland recognise this, and are responding by specifying their requirements in a way that favours energy efficiency and low environmental impact. By providing working examples, the public sector can also encourage the wider business community to adopt similar innovations.

A procurement innovation group is currently exploring ways of linking public R&D funding, development agencies and public procurement to further stimulate innovation, both in the public sector itself and in the enterprise sector.

e-Procurement

e-Procurement, used throughout the Irish public sector, reduces tendering costs for bidders (particularly important for SMEs), and typically results in a wider range of bidders, increasing the potential for innovative proposals.

Enterprise Ireland, in cooperation with InterTradeIreland and Invest Northern Ireland, has developed Go-Source, an all-island public procurement directory and web site, and Go-Tender, which provides SMEs with briefing and mentoring to improve their prospects of securing public procurement contracts.



5

Networks, Clusters and Gateways

Innovation through collaboration



Internationally, it has been shown that collaboration and cooperation between firms is a fertile source of innovation. Networks of firms, public institutions and educational institutions provide focus and efficiencies that deliver a competitive edge.

Our policy is geared towards stimulating and supporting networks of enterprises and other innovative forms of collaboration, both domestically and transnationally. However, while public bodies can stimulate such collaboration, it is the firms themselves that must lead and develop it if it is to be successful.

Networks

Significant benefits accrue to enterprises – and particularly SMEs – that collaborate. They can share information on technology, markets and business models, collaborate on skills development, pool resources for R&D or specialist equipment, and provide mutual support in a variety of other ways. They can achieve more together than any one of them could do alone.

Enterprise Ireland is currently providing funding for such activities through its Industry-Led Networks Pilot programme, which is designed to support industry-led networks undertaking collaborative projects that contribute in some way to national economic objectives.

InterTradeIreland helps coordinate and develop all-island business networks in sectors that are considered to be especially important for future economic growth, such as the health/biotechnology, food, software, polymer and plastics sectors.

Clusters

Clusters are geographical concentrations of interconnected businesses, suppliers and knowledge providers in a particular field. They are a particular feature of more innovative and more successful economies and help increase innovation and productivity levels of their constituent parts. Clustering incorporates several desirable aspects of a national system of innovation:

- **Close linkages between industry and higher education;**
- **Effective knowledge flows between suppliers and customers; and**
- **Collaborative, focused attention to common problems.**

In Ireland, clusters are emerging in sectors such as software, pharmaceuticals and medical devices, including some with the potential for significant cross-border activity including in the health/bio-technology, polymer and plastics sectors. These are being developed with the support of InterTradelreland, Enterprise Ireland and IDA Ireland. Strategic cooperation between Enterprise Ireland, Invest Northern Ireland and InterTradelreland provides the critical mass to accelerate the development of all-island world-class companies.

Regional innovation

The *National Spatial Strategy* identified nine Gateways with the potential to drive balanced regional development; and to support distinctive and innovative projects in Gateway areas, the Government established a €300 million *Gateway Innovation Fund*, as part of the *National Development Plan 2007-2013*.

Enterprise Ireland has ten regional offices throughout the country, and drives innovation in the regions by:

- **Fostering the growth of innovation-based start-ups throughout the country;**
- **Developing existing client companies in all locations; and**
- **Providing the infrastructure for entrepreneurial development (for example, business incubation facilities).**

Enterprise Ireland has invested heavily in business incubation activity, funding 25 incubation centres, 16 of which are based in Institutes of Technology.

The Institutes of Technology play an important regional role in the development of innovative businesses throughout Ireland. Enterprise Ireland provides financial support for a number of Centres of Excellence in applied research in the institutes, and the Applied Research Enhancement Programme helps the institutes to develop their research capabilities in areas that are of strategic relevance to industry in their region. By 2008, twelve centres were receiving investment of €15 million, with plans to support a further thirty centres in the fourteen Institutes of Technology.

As the global market becomes more sophisticated and demanding, the research and learning institutions are becoming more significant economic players at local, regional and national levels, and they must be able to respond better and faster to market demands. They must develop wider and deeper partnerships that harness and develop regional scientific and technological knowledge. The principal role of the third-level education sector in this context is to develop skilled, qualified people with the potential to become the innovators in industry.

The development agencies are working closely with the Universities and Institutes of Technology to enhance their ability to support industry at regional level with training, education and R&D. In addition, Expertise Ireland provides businesses with access to expertise in all the Colleges and learning Institutions in Ireland and Northern Ireland.







Intellectual Property Protection and Management

Maximising return on investment



As Ireland invests heavily in R&D, we must ensure that the fruits of that R&D are optimally exploited. That means that the intellectual property arising from the research must be identified, protected and commercialised.

In recognition of this, we have put in place a number of measures to:

- **Raise awareness among researchers in academia and industry of the value of intellectual property, and the importance of protecting and managing it;**
- **Identify valuable intellectual property arising from publicly-funded research and ensure that it is exploited commercially;**
- **Make it economically attractive to develop and exploit intellectual property in Ireland; and**
- **Ensure that intellectual property is protected by a strict legal framework.**

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Other factors that favour Ireland as a location for business activities based around intellectual property (IP) include the availability of skilled professionals, such as lawyers, licensing executives and tax experts conversant with the management of IP portfolios.

Raising awareness

The Patents Office is the public institution charged with implementing the national patents, trademarks, copyright and design regimes. The office conducts a range of awareness-raising activities, and it works closely with several County and City Enterprise Boards (CEBs) to raise awareness of IP issues among entrepreneurial start-up companies.

The Enterprise Ireland TechSearch initiative helps companies – and in particular SMEs – to locate suitable partners locally or internationally, and negotiate with them for access to intellectual property.

Exploitation of research results

Two codes of practice have been published relating to the management of intellectual property arising from publicly-funded research (in whole or in part). These provide a comprehensive framework for the commercialisation of research, in which the rights and responsibilities of all involved parties are made clear. These codes of practice provide certainty, confidence and consistency to all stakeholders and underpin Ireland's attractiveness as a location for R&D and its subsequent exploitation.

Enterprise Ireland's *Intellectual Property Fund for the Higher Education Sector* and the *Intellectual Property Assistance Scheme* provide advice and financial support for patenting and commercialisation. The Technology Transfer Offices in third-level institutions play a vital role in managing the institutions' IP and ensuring that it is commercialised wherever possible.

We have created an attractive fiscal environment for ownership and licensing of intellectual property. The sale of intellectual property is exempt from stamp duty, and royalties on patents are tax-free.

Legal framework

The regulation of intellectual property rights in Ireland is a vital part of the overall legislative framework that promotes, protects and encourages innovation. The Irish system is consistent with best international practice, reflecting the country's commitment to EU Intellectual Property Law and to other international treaties and conventions, such as the European Patent Organisation, the World Intellectual Property Organisation, and the World Trade Organisation.

The high cost of legal action to enforce intellectual property rights or to defend against allegations of patent infringement can be problematic for small companies. Ireland is working at European level to try to alleviate such costs and is also supportive of the proposal for a Community Patent.

The Commercial Court is a quick, effective method of enforcing intellectual property rights. Court-appointed experts enable complex IP issues to be dealt with expeditiously. This flexible and innovative approach by the Commercial Court is consistent with Government policy of ensuring IP rights are fully respected and alleged violations are promptly dealt with.



Services and Emerging Sectors

**Innovation where
it's most needed
and least expected**



Nearly 70 percent of the Irish workforce is now employed in the services sector, and, with services exports worth €64.8 billion in 2007, Ireland is now the 11th highest exporter of services in the world. The Government and state agencies recognise the great potential value of innovation in services to the Irish economy. We are refining policies and supports in line with both the opportunities that services innovation offers, and emerging models of business organisation and service delivery.

Creating opportunities for innovation

The focus of innovation has traditionally been on the manufacturing industry. Ireland's focus on services has the potential to give us an 'early mover' advantage. This enables us to develop truly innovative policies and practices and to position ourselves among the leading countries in services innovation.

According to the Economic and Social Research Institute, this expansion in services growth will have implications for a range of policy areas, including industrial and regional policy. Forfás convened The Services Strategy Group to develop a national services strategy, with the aim of maximising the returns from existing enterprise services, and developing new service industries. The Group acknowledges the need for and recommends the development of a National Services Innovation Policy and Strategy.

International financial services

Financial services have become more important as a source of both wealth generation and employment in Ireland.

The international financial services sector operates in a global environment, in which innovation and productivity are essential drivers of competitive advantage. Ireland is well-positioned in this sector: the Global Financial Centres Index (funded by the City of London) ranks Dublin as the fifteenth most important international financial centre in the world. More specifically, in terms of its business environment, Dublin is ranked tenth, reflecting Ireland's strong regulatory environment, and in particular sectors, Dublin ranks even higher: in asset management, it is ninth; in insurance, fourth.

The Clearing House Group, operating under the auspices of the Department of the Taoiseach (Prime Minister), with representatives from both the public and private sectors, is working to establish linkages between industry and academia to ensure that appropriate skills are developed, and that relevant research is conducted and made available to the industry.

Innovation in environmental goods and services

While climate change and the need for more sustainable use of resources pose significant challenges for industry, they also offer significant opportunities for innovative products and services in a range of sectors. Examples include mature industries, such as drinking water supply, waste-water treatment and solid waste management, and newer, highly innovative industries such as environmental monitoring, renewable energy and 'clean' technologies.

The environmental services sector has expanded greatly in recent years, with annual global sales now at €680 million, and with a predicted growth of 15–20 percent over the next three to four years. This is due primarily to heightened environmental awareness and improved regulation. Forfás and InterTradelreland are currently conducting an all-island study of the sector to identify opportunities for existing firms and potential entrants, and the supports and framework conditions that might best assist them.

The Government is committed to the development of environmental technologies in Ireland, for both economic and environmental reasons. In support of this, the remit of Science Foundation Ireland has been broadened to include sustainable energy and energy efficient technologies, so that significant funding can be made available for world-class research and development in these areas.



Entrepreneurship and Business Expansion

The innovation future



Entrepreneurial behaviour and innovation are inextricably linked, and Ireland is one of the most entrepreneurial countries in the world. The Global Entrepreneurship Monitor ranks Ireland second in the EU and fifth among OECD countries for entrepreneurial activity. For firm-level innovation activity, Ireland ranks fourth out of the EU15.

The climate in Ireland for entrepreneurship and innovation is positive, assisted by our benign business framework conditions, such as relatively low taxation, low regulatory burden and relatively easy access to finance.

Our state agencies and County and City Enterprise Boards promote and support entrepreneurial and enterprise innovation activities, by providing direct funding, information, training, advice and facilities.

Start-up funding

The state agencies provide practical supports and funding to high-potential, export-orientated start-up companies. In addition, the recently launched Growth Fund provides eligible SMEs with funding for capital equipment, technology acquisition, training and consultancy. We also help companies find suitable sources of equity finance, for example through the HALO Business Angels Partnership.

Irish taxation policy supports investment in emerging companies. The Seed Capital Scheme and the Business Expansion Scheme provide tax incentives for investment in start-ups and expanding businesses respectively.

Access to know-how

The State has invested in a number of schemes to ensure that developing businesses have access to the information, training and advice that they need. The Enterprise START Programme provides new start-ups with information and training delivered by experienced entrepreneurs; the *Skillnets* programme is designed to enhance management capability in SMEs; the Enterprise Platform Programme provides entrepreneurs with a structured one-year training and support programme.

Enterprise Ireland, for example, in its *Leadership 4 Growth* programme and its International Selling Programme, is working with companies to ensure they have world-class management teams with skills in the critical areas of sales, marketing, technology and innovation.

The recently launched *Tech-Check* scheme, run by the County and City Enterprise Boards, offers ICT audits for growing businesses to ensure that they are optimally exploiting available information and communications technology.

Access to facilities

The Community Enterprise Centres throughout the country provide a supportive environment for entrepreneurs at local level. There are currently 105 of these Centres, and a further 29 are planned.

We are targeting the expansion businesses and encouraging innovation in existing enterprises. R&D tax credits, for example, are intended to encourage in-house R&D. Dedicated teams in Enterprise Ireland are working with companies to help them achieve annual sales in excess of €20 million and to become sustainable global enterprises.



Fostering entrepreneurship

Our policies are geared towards stimulating latent entrepreneurial potential (particularly amongst women and immigrants), reinforcing entrepreneurial thinking in the educational system and enhancing the culture of entrepreneurship.

The County and City Enterprise Boards encourage female entrepreneurship by promoting successful female entrepreneurs as role models, using mentoring and networking opportunities through the Women in Business initiative. They have also been very successful in attracting women to participate in training programmes, such as Start your Own Business courses and Management Development Programmes. Women make up nearly 60 percent of participants on these programmes.

The County and City Enterprise Boards promote programmes such as the enterprise in second-level schools through Student Enterprise Awards.

Tapping the entrepreneurial skills of immigrants

Immigrants are making a significant contribution to Irish society and economy. They have skills, talents and new perspectives that can be of benefit to Ireland. The skills profile of immigrant workers in many cases exceeds that of the resident population. They can make a material and positive impact on future social and economic growth. The State agencies are working to maximise the opportunities presented by this new pool of talent, and to reduce the barriers to entrepreneurship presented by, for example, language difficulties or cultural differences.

Already, between 6 and 10 percent of new businesses in Ireland are established by immigrants. Immigrant entrepreneurs may lack the societal supports available to indigenous entrepreneurs. The EMERGE project, supported by the European Social Fund and *Skillnets*, helps alleviate this through the promotion of entrepreneurship in ethnic minorities and by providing free training to ethnic minority entrepreneurs at pre-enterprise, start-up and growth stages.





Partnership and
Workplace Innovation

The future of work



Social Partnership Agreements

Since 1987 Ireland has embraced social partnership as a model for finding solutions to shared problems in the economic and social domains. Essentially, this has involved the Government working together with trade unions, business and employers, farming organisations and community and voluntary bodies to determine key aspects of economic and social policy. This has led to a series of detailed programmes that have delivered unprecedented levels of economic stability, social cohesion and industrial peace.

The most recent programme, *Towards 2016*, is the seventh in the series, and it is testimony to the strength and durability of this innovative economic and social model in finding solutions to shared problems that serve the public good.

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National Workplace Strategy

Social partnership fosters innovative activities and practices to ensure the continuing transformation of the workplace in Ireland.

Working to our Advantage: a National Workplace Strategy is a blueprint by the National Centre for Partnership and Performance (NCPPI) aiming to transform Irish workplaces. The Strategy takes a coherent and integrated approach to workplace development and focuses on actions to stimulate workplace change and innovation, within a social partnership environment. The key message of the *National Workplace Strategy* is that the quality of Irish workplaces is critical to Ireland's transition into an even more dynamic, highly skilled, innovative and knowledge-based economy. In particular, the Strategy identifies the need for more organisational innovation and related improvements in workplace cultures to complement and service ongoing innovation in products and processes.

Workplace Innovation Fund

The *Workplace Innovation Fund* helps companies build a stronger commitment to workplace innovation. It is administered by Enterprise Ireland in collaboration with the NCPP and has three main strands:

- ■ **A public awareness campaign:** The National Centre for Partnership and Performance aims to bring the concept and practice of workplace innovation to a wider national audience.
- ■ **Support for capacity building:** This aims to enhance the capacity of the social partners to build a stronger commitment to workplace innovation and change.
- ■ **Promotion of innovation at enterprise level:** This focuses on companies who are seeking to leverage workplace innovation to improve their competitiveness and productivity.

The Workplace Innovation Fund is a unique opportunity for SMEs to receive financial support for projects seeking to develop partnership and participation within the workplace leading to productivity improvements, improved performance and employee well-being.

This positive approach to the management of innovative change through partnership builds on over twenty years of experience that will equip Irish workplaces to deal with future challenges.

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Competition and
Better Regulation

**Government as a
driver of Innovation**



Competition fuels innovation

The pressure to be competitive drives innovation across the range of business practice; and, conversely, innovation is a key driver of competitive advantage.

With greater competition in markets, companies need to draw on all their entrepreneurial and innovative skills to develop new products and services, to exploit their particular strengths, abilities or other advantages, and to meet their customers' needs effectively. Enhancing competition within Ireland's domestic economy is critical to improving the cost competitiveness of internationally-trading Irish-based firms.

Competition Authority

The Competition Authority has a role in promoting competition, and it has recently completed studies into a range of sectors, including banking, private health insurance, and the professions (engineers, architects, optometrists, dentists, solicitors and barristers). Further studies are expected in this series. The Authority has an important role in enforcing competition laws.

Better regulation

The challenges facing regulatory bodies include ensuring that regulation is not too burdensome on the enterprise sector, and the cost of compliance does not impact on competitiveness. The current consensus, as reflected by the National Competitiveness Council, is that the regulatory environment has played a beneficial role in the development of Ireland's international competitiveness. Further simplification of regulation could facilitate innovation, research and business development.

Better regulation has the potential to drive innovation in certain areas – for example in the healthcare, international financial services and environmental areas. Better regulation does not always mean less regulation. In the field of intellectual property, for example, better regulation can mean more effective enforcement of intellectual property rights, rewarding those who successfully innovate.

The application of Regulatory Impact Assessments (RIAs) was broadened in 2005 to include all proposals for primary legislation, significant statutory instruments, draft EU Directives and significant EU Regulations.

We are currently undertaking several initiatives on better regulation; these include addressing:

- ■ **The recommendations of the Report of the Business Regulation Forum (2007); and**
- ■ **The regulatory aspects of the Report of the Small Business Forum (2006) – which were drawn up with the active involvement of industry.**

A high level group, comprising business, Government and union representatives, is driving implementation of these recommendations; this is focused on five areas: taxation, health and safety, environment statistics, employment and company law.

Conclusion

Tracking our Progress

Throughout this document, we have identified the depth and breadth of innovation activity taking place in Ireland, and have described the substantial progress that we have made in building capacity and in drawing out the latent imagination and creativity within the Irish economy. Our enterprise support agencies are now highly geared to stimulate and assist people and firms to produce new services and products and gain new markets. We now have quality programmes in place to create knowledge and to build on the skills and talents of our people, across the regions and throughout society.

We have sought to document the interaction between policy and practice in the Irish innovation system; and in doing so, we acknowledge the contributions of many people, companies and organisations to the national innovation agenda. We hope that we have also created an awareness of how individual efforts can combine to support and underpin innovation. It is clear that there is a growing openness to change, collaboration and creativity in Ireland, and this manifests itself in our relatively high performance ranking in the sectors which drive innovation.

Working collaboratively with the development agencies, we will continue to monitor and track progress over all of the policy areas covered in this policy Statement and will report annually on the measures which we are taking to achieving our ambition.

We aim to improve our performance in all areas addressed in this Statement and will publish progress on our website. Ireland's overall innovation performance will continue to be measured by the National Competitiveness Council in its annual Report to the Government.



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Forfás