



# Innovation Ireland

## Report of the Innovation Taskforce Summary

March 2010



Ireland - The Smart Economy

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## WHAT IS INNOVATION?

Innovation entails investment aimed at producing new knowledge and using it in various applications. It results from the interaction of a range of complementary assets which include research and development, but also software, human capital, design, marketing and new organisational structures – many of which are essential for reaping the productivity gains and efficiencies from new technologies.

The Innovation Taskforce endorses *Building Ireland's Smart Economy*, which provides a framework across five action areas for enhancing productivity and promoting sustainable growth in the Irish economy including through innovation in its broadest sense.

Whilst acknowledging that Innovation is a broad concept and extends beyond the enterprise sector we, as requested by the Government, have focused in particular on measures to progress one pillar of *Building Ireland's Smart Economy* (Action Area 2):

“ Building the innovation or ‘ideas’ component of the economy through the utilisation of human capital – the knowledge, skills and creativity of people – and the ability and effectiveness of that human capital to translate ideas into valuable processes, products and services.”

## WHY IS INNOVATION IMPORTANT?

Increasing our competitiveness by reducing costs, stabilising the public finances and preparing for a global recovery, while essential, will not be enough to ensure we return to sustainable economic growth.

Increasing productivity, that is developing new ways to get a higher quality and quantity of output of goods and services from each unit of input, is the key driver of economic performance and sustainability.

Innovation, in both the production and use of ideas, technology and processes, is important in this context because it drives productivity.

We believe that Ireland's future economic success depends on increasing levels of innovation across all aspects of Irish enterprise – including large Irish-owned multinationals, foreign multinationals located here, established SMEs in services and manufacturing, as well as start-ups and existing companies with high growth potential.

## WHAT IS THE VISION OF THE INNOVATION TASKFORCE?

**Our aim is that by 2020 Ireland will have a significant number of large, world leading, innovation-intensive companies, each having a global footprint, many of which are Irish headquartered and owned.**

**These companies will provide high quality employment and generate exports and tax receipts. They will vary in scale, type of activity and pattern of company ownership. What will be distinctive about these companies is that they will be ambitious, export focused and, above all, innovative.**

**In order to achieve this vision and secure Ireland's economic future we need to significantly increase our current rate of job creation and new company start-ups.**

This requires a concentrated and focused national effort. Policy and investment decisions must be centred on supporting and encouraging the entrepreneur and innovative enterprises through driving an economic and business model which is both invigorating and self-renewing.

## WHY DO WE BELIEVE IRELAND CAN BECOME AN INNOVATION HUB?

Ireland has many attributes which make it suited to becoming a Global Innovation Hub in Europe.

We have:

- + favourable demographics;
- + a strong educational standard;
- + a good tax and regulatory environment;
- + a growing entrepreneurial culture;
- + an international mindset;
- + a reputation for cultural innovation;
- + a large Diaspora who are talented in many fields;
- + an excellent group of innovative multinational companies and have recently had significant success in attracting high-value R&D activity into Ireland.

***Nevertheless, we need to do more.***

# WHAT ARE THE KEY ELEMENTS OF AN INNOVATION ECOSYSTEM?

To make innovation work for us we have to develop an ecosystem in which each element, and each interaction, supports innovation across the economy and society.

The key elements in such an ecosystem are:

- + entrepreneurs and enterprises (indigenous and foreign-owned);
- + investment in research and development;
- + the education system, in particular, higher education institutions;
- + finance, in particular risk capital;
- + the tax and regulatory environment;
- + public policy and institutions.

## The Innovation Ecosystem



# WHAT PRINCIPLES UNDERPIN THE CREATION OF THIS ECOSYSTEM?

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

## INNOVATION IN PRACTICE

**Citi** was the first financial services company to set up a dedicated research and development facility. This global Research, Development, Innovation and Learning (RDIL) Centre has become a hub for developmental and fundamental research projects in the financial services business. To date, Citi has invested over €62 million in RD&I projects in Dublin and created a Centre of Excellence for the development of products and processes for Citi's Europe Middle East & Africa (EMEA) business.

Established in 1980 to provide engineering services to the Irish micro-computer and electronics industries, in the mid-90s **Creganna** entered the rapidly growing medical device sector. Since 1999, it has focused exclusively on this area and is now recognised within the industry as an expert contract design and manufacturing partner. It is a supplier to all leading companies within the sector. Creganna-Tactx Medical employs over 550 people at its Galway headquarters.

**CRANN** is an SFI-funded research centre at TCD and UCC which is collaborating with Hewlett-Packard (HP) in the development of flexible, transparent and highly conductive thin films. This project demonstrates Ireland's capacity to deliver real value to industry, aiding in the attraction of new foreign direct investment and the further embedding of existing industry and their associated jobs.

**EirGen Pharma Ltd** was supported as an EI High Potential Start-up in 2005 and commercially launched its early stage breast cancer drug Eir-012 across Europe in 2009. This, coupled with a significant pipeline of drugs which are due for commercialisation in 2010 and beyond, allows EirGen to be in a position to significantly increase staff levels. In 2009 EirGen signed a significant partnership agreement with a leading Japanese pharmaceuticals company to develop and commercially supply three cancer products from their facility in Waterford.

# WHAT DO WE NEED TO DO TO MAKE THIS HAPPEN?

## Build on our Investment to date in research and development

Current economic difficulties should not be allowed diminish the level of investment which we believe is necessary or inhibit the return on investments already made.

Therefore we must:

- + Deliver on the investment framework set out in the Strategy for Science, Technology and Innovation (SSTI) 2006-13 and achieve the goal in the renewed Programme for Government of investing 3% of GDP in R&D by **committing to investment in an updated SSTI for the 2014-2020 period.**
- + **Ensure greater and more co-ordinated public research investment**, leveraging of more private sector investment and channelling this investment into agreed areas of national priority.

## Take advantage of new opportunities

As well as sustaining our strengths in particular sectors, we must also grasp the significant opportunity offered by new developments in converging technologies. We must strengthen and scale indigenous companies including through incentivising collaborations.

We believe that the State can leverage these existing attributes and resources in a variety of ways to drive our transformation to an Innovation Hub:

- + we recommend that Ireland can brand itself as an innovation hub through a **European Accelerator Programme**. The object here is to attract companies from within the portfolios of top tier venture capital funds to open their European headquarters in Ireland in the immediate future with a view to delivering jobs, expertise and top tier venture interest for Ireland.
- + public procurement should be used to stimulate the development of innovative solutions with export potential. A number of carefully selected **Flagship projects** should be set in train requiring the development of innovative new products and services, many of which will occur through cross-sectoral collaboration between companies, both indigenous and MNCs.
- + a team from the key agencies should be formed to ensure that we take full advantage of new opportunities in **convergence**.

We also recommend measures to help increase R&D and innovation capabilities, including in the area of **product design**, within Irish industry.

## Actively market Ireland as a centre of excellence for innovation

We must increase our current human capital stock by proactively **attracting people to Ireland to start up innovative companies**. This requires effective marketing to ensure that potential investors, entrepreneurs and researchers are attracted here to help strengthen our innovation ecosystem.

- + All State agencies and HEIs need to **market jointly and brand Ireland as a leading innovation location and destination of choice for European and other overseas investors**. We need to fully utilise the willingness of the Diaspora to contribute.
- + This effort should include a **programme of visits** and other activities whereby Ministers, Departments and State agencies convey a consistent, positive message about Ireland as a centre of excellence for innovation.

## Increase the availability of Venture Capital

If we are to start and grow innovative enterprises on an unprecedented scale, a key goal must be a **transformation in the scale and nature of the Irish Venture Capital environment**. We must attract top tier venture financing to Ireland so as to successfully scale innovative companies.

This can best be achieved through the Innovation Fund - Ireland, as envisaged in *Building Ireland's Smart Economy*.

We must also realise the opportunity to redirect capital investment into innovative companies, including through “business angels” who also transfer knowledge and experience.

- + We therefore recommend that Ireland should nurture a national portfolio of **Business Angel funds**.
- + Until this has been achieved, we suggest that temporary State intervention in the form of a **new Seed Capital scheme** is required.
- + We identify a set of **tax initiatives** to incentivise start-up and angel funding activity.
- + While Enterprise Ireland is very active in this space, it has a broad focus and we believe that it **must increasingly focus on start-up and early stage activities** if we are to achieve the job creation trajectory envisaged in this Report.



## Support our innovators and entrepreneurs

We need to find ways to enhance understanding across society of the role every person can play in building an innovation-intensive economy and making the Smart Economy a reality.

We need a **sea change in attitudes** – in public and private sectors – towards innovation and entrepreneurship, to recognise that they involve risk, and occasionally result in failure.

- + Legal arrangements need to avoid any sense of stigma from a failed business venture provided there has been a reasonable approach to business risk. **That is why we recommend that personal bankruptcy legislation needs to be reformed.**

### INNOVATION IN PRACTICE

**PayPal**, an eBay company, set up its European operations centre in Dublin in 2003, serving customers across Europe. PayPal Ireland now employs more than 1,200 full time staff in several different functions including customer service, risk management and merchant solutions. The Dublin centre is PayPal's first regional centre of excellence and the model for PayPal's international operations worldwide.

SFI Principal Investigators, Dr. Geraldine Boylan, Dr. Gordon Lightfoot and Dr. Liam Marnane conduct research in the **Neonatal Brain Research Group** in UCC. The group has developed innovative software to detect seizures in newborn babies with a view to preventing long term brain injury. The research team is collaborating with a global healthcare company, Cardinal Health, to bring their novel technologies to market.

**Inishowen Engineering** has developed a novel patented product for fish farming named the Atlantis Light (with support from EI). The company formed a partnership with Marine Harvest Ltd (the largest Fish Farm company in the world) and the University of Stirling to carry out a successful live trial. Two sizes of the product are already available, and Inishowen Engineering has commenced the development of a third light product. Inishowen Engineering currently employs 56 staff and is expecting to increase this number as this and other opportunities develop.

## Make it easier to identify and access Intellectual Property

The effective generation, nurturing, exploitation and protection of ideas is an essential element of an innovation-intensive economy. A more efficient and effective approach to identifying and accessing Intellectual Property arising from public research investment is vital if we are to strengthen our commercialisation focus. We make a number of recommendations in relation to Intellectual Property (IP) which we believe could **make Ireland a centre of international best practice**, creating significant employment and FDI opportunities.

- + Develop a **national IP protocol** as a priority, so that entrepreneurs and companies have predictability about the terms on which they can access IP created at Higher Education Institutions (HEIs) in order to turn it into products and services that meet customer needs.
- + **More meaningful metrics** to measure performance of HEIs and Technology Transfer Offices should reflect this Protocol. A portion of state funding for HEIs might be linked to these metrics.
- + The achievement of clarity and consistency in our national IP regime will set a standard for the consistent and speedy treatment of IP and give us a competitive advantage within the EU while **the process of finding, accessing and bundling IP from the HEIs needs to be rationalised**.
- + We should build on this advantage by **developing and marketing Ireland as an International Innovation Services Centre** offering global IP management, licensing and trading services.

## Attract new Foreign Direct Investment and transform existing activities

One of Ireland's most significant attributes and opportunities in driving innovation is its vibrant multi-national community.

Despite increasing competition, there are **new Foreign Direct Investment opportunities** for Ireland to be exploited by the IDA, as well as scope to transform existing FDI enterprises. The attraction of blue chip companies to Ireland to carry out research, development, product design and other innovation activities here is an increasingly important strand within our inward investment portfolio.

- + A number of our recommendations will **strengthen the innovation ecosystem thereby helping to attract more new investment and embed existing FDI**.

## Ensure that our education system promotes education and creativity

- + **Entrepreneurial skills** must be fostered at second, third and fourth levels of our education system.
- + In the HEI sector we support the delivery of scale and capacity through **rationalisation, collaboration and alliances such as the TCD-UCD Innovation Alliance and the NUIG-UL Strategic Alliance**. Looking to the future we must develop sufficient revenue streams to sustain excellence in our HEIs.
- + At second level we need to raise levels of competence and attainment in maths and sciences substantially such that they feed into STEM (Science, Technology, Engineering and Maths) disciplines at third and fourth levels. We believe that **mathematics attainment is crucial in this regard and suggest additional measures to improve this including incentives such as the awarding of CAO bonus points to those taking higher level mathematics** for Leaving Certificate.

## Strengthen linkages between education and industry

- + We believe that a more concerted national effort at workforce up-skilling is also essential for a competitive and productive workforce to support development of a smart economy.
- + We **strongly support placement schemes in companies for both graduates and undergraduates** to facilitate the transfer of high technology skills and expertise.

## Ensure we have world class physical infrastructure

High quality physical infrastructure is an important ingredient in building a successful and innovative economy and in attracting overseas entrepreneurs and FDI.

- + Universal access to **high quality broadband** is one key infrastructure for the smart economy. While Ireland has seen increasing uptake of broadband, accelerated progress is required.
- + Wet **laboratory space** for life sciences as a deficit which must be addressed as a matter of priority.

## HOW WILL WE ENSURE OUR VISION IS ACHIEVED?

We believe that our recommendations, if implemented in a coherent and determined fashion, **can deliver the inflection point in performance which is required** for significant job creation.

Given the scale of the transformation required and the broad range of actions necessary, we need clear targets against which progress can be measured, and mechanisms for doing so.

We have therefore provided **an estimate of how many jobs might be created – 117,000 by 2020 is at the lower end of our projections.**

We recognise the difficult economic context and that some of these recommendations have significant cost implications which would require re-prioritisation of limited resources at a time of serious budgetary pressure, while others require a re-alignment of efforts within Departments and agencies.

Our report represents our collective view of the right overall pathway forward to create an innovative, high-value, export-led enterprise sector although all recommendations in the Report are not necessarily supported by every member.

**We recommend a new High Level Implementation Committee reporting to the Taoiseach and the Cabinet Committee on Economic Renewal** to ensure that the recommendations are implemented in a dynamic and responsive fashion reflecting the fast-changing global environment in which Ireland must compete.

*“ The Report contains many new ideas, as well as calling for reinforcement and better alignment of existing efforts and programmes. It also poses a challenge to industry to seize the opportunities arising. I look forward to working with my colleagues in Government to take forward the Taskforce’s recommendations to make Ireland a Global Innovation Hub.”*

Taoiseach, Brian Cowen, T.D.