



# Enterprise 2025

Ireland's National Enterprise Policy  
2015–2025

Background Report

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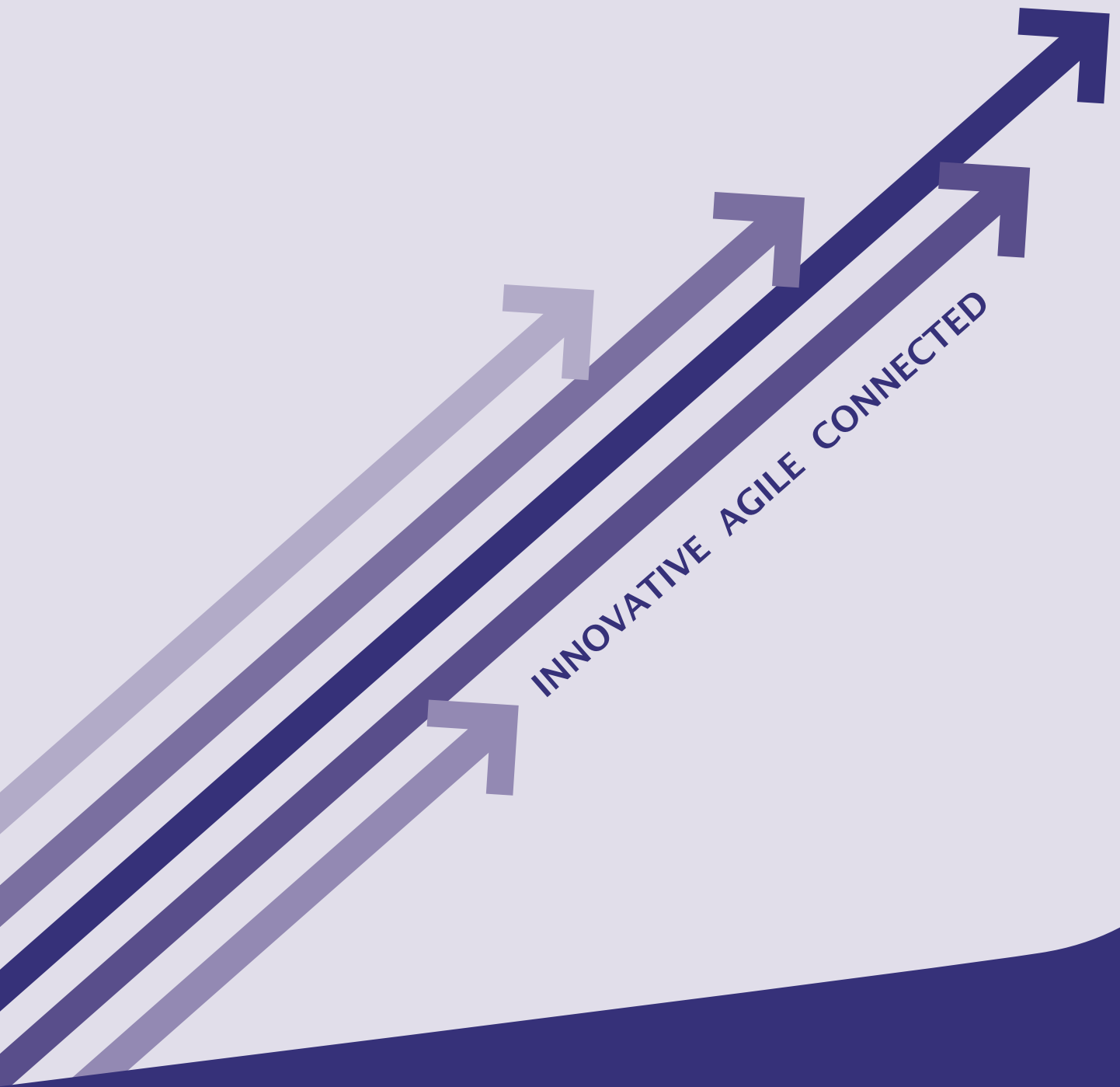
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# Executive Summary



## Executive summary

### Introduction<sup>1</sup>

#### Competitive enterprise drives economic growth and creates jobs

As we emerge from the most severe recession of recent decades, this strategy Enterprise 2025 sets out our longer term ambition for enterprise growth and job creation over the coming decade.

We have 126,000 more people in work today than were employed when the Action Plan for Jobs (APJ) process was launched by the Minister for Jobs, Enterprise and Innovation in 2012<sup>2</sup>. Companies supported by our enterprise development agencies contributed almost 40,000 jobs to 2014. Our exports in 2014 reached their highest ever level at €215 billion<sup>3</sup>.

We know from the progress achieved in restructuring the economy since 2011 that a competitive export-led enterprise base is at the heart of Ireland's longer term economic growth prospects.

A competitive enterprise base drives productivity growth, innovation and investment and creates jobs, delivering higher standards of living for all. Through exchequer returns, enterprises contribute to the provision of essential public services including infrastructures, healthcare and education. Enterprises also contribute to enhanced quality of life and the attractiveness of our towns and cities by providing quality retail outlets, restaurants, professional and personal services and by engaging in collaborative regionally based initiatives. In addition, innovative enterprises can contribute to realising national policy priorities in areas such as smart infrastructures, healthy ageing, food security and a sustainable environment to deliver better outcomes for our citizens.

Although we have made significant progress over recent years, we cannot be complacent. Ireland operates in an intensely competitive global environment, where change is the only constant, and where change can have a transformative impact on our enterprises.

We are ambitious for Ireland's future growth prospects. Realising our ambition requires a step change in how we align our policies across government and invest in those areas that will support longer term sustainable enterprise growth and stability. We will need to be agile, to anticipate and respond to change and ensure that our enterprise and complementary policies remain fit for purpose over the coming decade. We will also need to remain vigilant and to monitor employment growth patterns across sectors of the economy so as to avoid the mistakes of the past.

Enterprise 2025 sets the strategic framework for coherence across government departments to focus our resources in order to foster a better future and to deliver sustainable enterprise growth and jobs<sup>4</sup>. By taking the actions set out here we can realise a more ambitious scenario

<sup>1</sup> A short-form version of this report Enterprise 2025: Innovative, Agile, Connected, Summary Report has been published separately and is available at <http://www.djei.ie/en/Publications/>

<sup>2</sup> Based on QNHS Q2 2015 seasonally adjusted data

<sup>3</sup> Balance of Payments Annual Series (BPM6), CSO Statbank

<sup>4</sup> Enterprise 2025 Background Report is available at <https://www.djei.ie/en/Publications/>

than that set out in the projections framed in the context of Budget 2016<sup>5</sup>, delivering more jobs and an unemployment rate of 6 percent by 2020.

### Signs of recovery

Much has been achieved over the past number of years in restoring fiscal sustainability, stabilising the banking system, improving our international competitiveness and in creating jobs. We are seeing the impacts of the actions we have taken since 2012 through the APJ process:

- There are now 1,958,700 people at work (Q2 2015) – more than was employed a decade ago. In agency supported enterprises, job losses are at their lowest level for more than a decade;
- New company incorporations have increased by over a quarter since 2012;
- Total exports from Ireland were €215 billion in 2014. This was the highest exports on record, and over three times higher than in 1998;
- Exports from Enterprise Ireland supported enterprises reached an all-time high of €18.6 billion in 2014, having recovered since the recession and exceeding levels experienced during the height of the economic boom; and
- Direct expenditure in the Irish economy in 2013 for both Irish and foreign owned enterprises<sup>6</sup> was €43.8 billion and surpassed levels experienced in 2008.

Higher levels of productivity growth, sustained investments in RD&I and increased levels of export intensity point to continuing improvements in the capacities, capabilities and competitiveness of our enterprises. Job churn is a natural consequence of restructuring within the enterprise base. A reduced level of job losses within the agency portfolios in 2014 demonstrates a welcome sign of resilience and sustainable employment – gross job losses at 6.5 percent for both agencies is less than was the case even in the peak employment years when job losses stood at around 9 percent annually<sup>7</sup>.

### Structural issues persist...

While progress has been made in terms of creating jobs and growing exports, many structural issues persist. We continue to face challenges. Our unemployment rate is still higher than we would like at 9.8 percent. There are indications of upward cost pressures. Our investments in RD&I remain below comparator countries, and the proportion of enterprises engaging in research and innovation is too low; there are some skills areas in which job opportunities exceed supply; investment in workplace learning and management development is low; we have a narrow base of exporters and not enough Irish owned firms growing internationally; productivity levels are below comparator countries (with the exception of some FDI intensive sectors); and we remain highly concentrated in terms of export markets and source markets for inward investment. Many government departments have a role to play in addressing these issues. In the context of increasingly complex global business models we need to ensure that Ireland's export growth continues to be underpinned by substance and economic activity.

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<sup>5</sup> Short-term economic outlook, presentation to the Oireachtas Committee on Finance, Public Expenditure and Reform, Economics Division, Department of Finance, 6th October 2015

<sup>6</sup> Agency supported enterprises, Source DJEI Annual Business Survey of Economic Impact (ABSEI)

<sup>7</sup> Gross job losses are calculated as job losses as a percentage of the previous year employment base

### ...and external uncertainties remain

As a small open economy we rely on external demand and international markets for sustainable and continued growth. Global economic uncertainty remains high. Global economic growth and trade is slowing. We are acutely aware of potential disruptive geopolitical, technological and financial forces that could have implications for Ireland's future growth path in an increasingly interconnected world<sup>8</sup>, including for example the UK negotiations with regard to the EU, and the ongoing negotiations in relation to the Transatlantic, Trade and Investment Partnership (TTIP). Countries in South East Asia are attracting growing shares of mobile FDI. The competition to attract FDI has intensified significantly, and all of FDI is hard won. More countries are offering attractive locations for investment at a time when FDI project flows have reduced.

### Change is the only constant for enterprise...

The increasing integration of the global economy and freer movement of people, information and finance has accelerated the pace of change for enterprises.

People are increasingly mobile and are making decisions about where they want to work and live – and the war for talent is global. Global value networks are resulting in the progressive disaggregation of supply chains and creating new ecosystems involving multi-dimensional partnerships between companies, suppliers, competitors and research institutes in different locations throughout the world. Digitisation is pervasive in its impact, driving transformative change across all sectors of the economy and changing the way in which companies do business, engage with customers, reach new markets and innovate. The environmental sustainability agenda presents both opportunities and challenges for enterprises<sup>9</sup> – and all enterprises need to adapt in terms of product lifecycle management, minimising environmental impacts and enhancing energy efficiencies. For enterprises, change is the only constant – presenting opportunities and challenges.

### Ireland's economy is at an inflection point...

We are right to acknowledge the considerable progress that has been made since 2011, and that we are experiencing a return to growth following a period of deep recession. We have a strong basis from which to grow, and we have significant potential for growth in both manufacturing and services activities. But we cannot and should not underestimate the genuine and considerable challenges facing us as we look out over the next decade:

- global competition for investment and talent has intensified as we aim to be recognised internationally as innovative and entrepreneurial;
- new technologies are disrupting industry norms and enabling transformational change. We want to ensure that our enterprises are well placed to take advantage of such opportunity;
- relative competitiveness is a moving target and we want to be placed in the top rankings;
- we have had higher levels of emigration and a higher level of unemployment than is acceptable; and

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<sup>8</sup> Refer also to Draft National Risk Assessment 2015: Overview of Strategic Risks, Department of the Taoiseach

<sup>9</sup> Refer also to the recently adopted UN international agreement on sustainable development, Transforming our World – the 2030 Agenda for Action, September 2015

- a range of structural issues in our economy and enterprise base remain that need to be addressed.

We have developed Enterprise 2025, reflecting on the global environment and putting in place new approaches to ensure that our policies across government remain fit for purpose in a changing world. Our policies will continue to be anticipatory and responsive and informed by analysis and evaluation.

### Enterprise policy to 2025 – a systems approach

Internationally, enterprise policy is evolving toward a 'systems' approach, with the role of Government acting as a facilitator, coordinator and market creator in addition to an investor<sup>10</sup>. Governments in other countries are increasingly engaging in creating networks, enabling cluster development, addressing coordination failures, and aligning strategic priorities through effective and ongoing dialogue with enterprise. A systems approach recognises that enterprise can play a constructive role in addressing broader policy objectives through innovation and partnership - so called 'grand challenges', including for example sustainable energy, healthy ageing, smart cities etc. This evolution in enterprise policy internationally has informed our own policy approach.

Enterprise policy is broad reaching and requires a whole of government commitment. Although DJEI is the principal governmental advocate for the enterprise sector, many other government departments play a crucial role in delivering on complementary policy actions to provide an environment that is conducive to job creation and supports the development of a competitive and sustainable enterprise mix<sup>11</sup>.

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10 See *Beyond Industrial Policy: Emerging Issues and New Trends*, Warwick, K. I, OECD STI Policy Papers, No. 2, 2013; and *Enterprise policy evaluation: Is there a 'new' way of doing it?*, Lenihan, H., *Evaluation and Program Planning*, 34 (4), 323-332, 2011

11 A number of policies and strategies are currently being developed or have recently been completed that are directly pertinent, including for example: *National Skills Strategy*; *Strategy for Science, Technology and Innovation*; *National Planning Framework*; *Food Wise 2025*; *Construction 2020*; *Harnessing Our Ocean Wealth*; *People, Place and Policy: Growing Tourism to 2025*; *IFS 2020*; successor to *Trade, Tourism and Investment Strategy*



# Our Ambition & Strategy for Enterprise 2025

Ireland – the best place to **succeed** in business  
*delivering*  
**sustainable employment** and **higher standards of living** for all

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**2.180m**  
at work  
by 2020

Irish owned  
exports  
**+€10bn**  
by 2020

**Top 3**  
competitiveness  
ranking

Sustaining  
full  
employment

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## INNOVATIVE AGILE CONNECTED

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### Enterprise resilience

- Across a range of sectors
- Pursuing new opportunities
- Building supportive ecosystems
- A step change in enterprise performance



### Differentiating Ireland

- Talent
- Place-making
- Innovativeness
- Connectedness



### Excelling in the basics

- Finance for growth
- Taxation
- Costs
- Infrastructures



## Our vision for enterprise to 2025

Ireland - the best place to **succeed** in business  
delivering  
**sustainable employment and higher standards of living for all**

*Our successful enterprises will be **competitive, productive and globally connected**, enabled by our **entrepreneurial and innovative culture** that is embodied in people, place, the policy system and government*

*where*

*Enterprise is valued for **creating quality jobs** and for **driving sustainable growth***

*and where*

*Enterprises play a crucial role in addressing grand challenges including through partnerships in research and innovation*

***delivering higher standards of living for all***

## Our ambition and strategy

### Driving export-led growth – delivering sustainable employment

For Ireland as a small open economy, sustainable long term growth is dependent on continued success in international markets. Our policy focus is predicated upon growth fuelled by foreign earnings derived from exports in the first instance as distinct from being driven primarily by domestic consumption, which we know is an unsustainable growth model.

Our ambition is to:

- achieve the potential for growth in Irish owned manufacturing and services exports by between 6 and 8 percent annually to 2020;
- realise increased export intensity of Irish owned firms to between 55 and 60 percent; and
- support geographic market diversification (including to high growth emerging markets) so that Irish owned exports to non-UK markets increase by 50 percent; and
- attract and grow export oriented foreign direct investment.

An export led strategy is not just about exporters. In addition to generating greater wealth than would be possible through only domestically traded activities, there is a substantial ripple effect in terms of job creation across the entire economy and an increase in technology adoption, innovation, standards and best practice overall.

### Stretching our employment ambitions

We are ambitious. We can achieve full employment that is sustainable and resilient over the longer term by taking the actions set out in Enterprise 2025.

Our ambition is to:

- reach 2.180 million people in employment and an unemployment rate of 6 percent by 2020; and to
- sustain full employment over the decade to 2025.

The potential to reach 2.180 million in employment by 2020 is based on the premise of export-led growth and would see an additional 266,000 people at work from a 2014 base<sup>12</sup>. We see the potential to achieve a 6 percent unemployment rate at a faster pace than that set out in the projections prepared in the context of Budget 2016 that forecast a 6.5 percent unemployment rate by 2020. We are aware that this will be challenging and that we have no control over global demand and other external factors. We can strongly influence our chances of success by focusing on supporting the productive sector, enhancing our relative competitiveness, leveraging existing comparative advantage in key sectors, addressing structural issues in the economy, improving productivity and our capacity to innovate.

Our enterprise development agencies, IDA Ireland and Enterprise Ireland play a key role in providing direct supports and services to export oriented enterprises. They will contribute circa 140,000 jobs (i.e. 75,000 direct jobs that will stimulate an additional 65,000 jobs indirectly) to the potential private sector employment growth to the period 2020. There is potential for a further 30,000 tourism related jobs<sup>13</sup>.

We will continuously monitor our employment growth patterns in terms of an export/non-export 'balance' and avoid the mistakes of the past.

Our policies will facilitate the creation of quality employment, taking into account the multi-dimensional aspects that define quality including: ensuring opportunities for advancement that involves workplace learning and development; ensuring that people are educated and trained to meet the needs of industry; recognising the opportunities presented by entrepreneurship as an alternative career path; and ensuring a system that facilitates flexibility without exploitation. Enterprise 2025 envisages the creation of a range of career opportunities across a broad spectrum of skills and across manufacturing and services activities.

### **Enhancing the employment prospects of the unemployed**

We will ensure that individuals are trained in relevant skills and competences to enhance their prospects for employment and that meet the needs of enterprise in a changing environment.

Looking out over the next decade, a return to sustainable economic growth and job creation will likely lessen the unemployment challenge considerably, although unemployment remains at an unacceptably high level at present. The activation initiatives as set out in Pathways to Work 2015 remain relevant and aim to enhance peoples' prospects for employment. Although the demand for these initiatives over the coming years will decline as more employment opportunities come on stream, a more intensified engagement may be required with the reducing cohort of unemployed to achieve our ambition for full employment.

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<sup>12</sup> Annual average employment over four calendar quarters, 2014

<sup>13</sup> People, Place and Policy: Growing Tourism to 2025, Department of Transport, Tourism and Sport, includes an overall target of 50,000 additional jobs in the tourism sector by 2025 - the data set out here has been interpolated to align with overall employment potential to the period to 2020

### Investing for competitive advantage

We will realise a step-change in the growth potential of our economy by focusing our capital investments to support the productive sector across a range of key areas.

Our ambition is to:

- restore our competitiveness to rank in the top three of the most competitive small countries in the world;
- realise productivity growth across the economy to levels ranking amongst the top five EU countries averaging 2.0 to 2.5 percent per annum over the long term; and
- contribute to the restoration of living standards to pre-recession levels through our enterprise policies and maintain an above average position relative to the EU-19 average over the period to 2025.

In the long run productivity growth is essential to improving living standards. Many of the resources that enterprises draw on to maximise productive capability come from the surrounding environment, including for example, a sound macroeconomic environment, the education and skills base of the labour force, transport and communications networks, science and technology know-how, competition and regulation policies, finance etc. It is important that increases in labour costs are accompanied by productivity improvements in the coming years.

### Focusing on Ireland's differentiators

We will build competitive advantage and differentiate what Ireland has to offer in terms of:

- **Talent** - developing and attracting talent for the 21<sup>st</sup> century, aligned with the needs of enterprise;
- **Place-making** - developing attractive places to invest, live and work throughout Ireland and optimising the potential of our regions;
- **Innovativeness** - strengthening our innovation system, and supporting enterprises to derive competitive advantage through innovation; and
- **Connectedness** - building connections regionally, nationally and internationally through business, people and the research system.

### Building resilience and achieving a step change in enterprise performance

We will take a whole of enterprise approach, leveraging the potential in all sectors of our economy. This will strengthen our resilience in today's global environment where the pace of change has accelerated and where competition for investment and mobile talent has intensified.

We will focus our efforts to achieve a step change in enterprise performance in terms of productivity, the capacity to innovate and to grow to scale. We will:

- stimulate a flourishing of entrepreneurship across all sectors and throughout the regions;
- work with ambitious companies to achieve a significant step up in their potential to scale and to grow on international markets;
- assist locally trading and employment intensive enterprises to improve competitiveness;
- attract, transform and sustain FDI that will add value to our economic fabric and will enable access to global value networks for Irish owned enterprises;

- achieve a significant uplift in enterprises investing in RD&I – with more enterprises and greater levels of investment – delivering innovative products and services, and
- stimulate greater collaboration between foreign and Irish owned enterprises and between enterprises, HEIs and the research base to develop critical mass in key sectors and clusters of sustainable advantage.

### Excelling in getting the basics right

Unless we address the basics in our business environment, the impact of other interventions will be compromised, and will make it difficult to meet the ambitious (yet achievable) potential. We will ensure a continued focus on:

- ensuring a competitive **funding environment** that provides a range of options to support our enterprises from start-up to growth;
- sustaining a competitive **tax environment**, including a competitive offering for enterprise and entrepreneurship, and contributing to Ireland’s attractiveness for talent;
- addressing structural issues that impact on relative **cost competitiveness**; and
- investing in quality **infrastructures** (or providing the regulatory and certainty required for private investment) that support the establishment and scaling of enterprises in Ireland.

Without the business environment basics the impact of other interventions will be compromised.

## Taking strategic action

This Government is committed to working together with business, to create the optimum environment in which enterprise can establish, grow and thrive. Our ambition as a government system is to be anticipatory, responsive and adaptive – demonstrating an enviable agility that can be more easily embedded in a small country such as Ireland.

We aim to deliver sustainable growth and job creation – impacting positively on the economy, on society and on the environment.

The following section sets out the strategic actions we will take to realise our ambition for sustainable growth over the period to 2025, delivering jobs and a higher standard of living for all. Delivery of an impactful enterprise policy requires a whole of government response.

### Enterprises playing their part

Our strategies, policies and interventions work best when they are informed by the needs of business and when industry engages effectively and with commitment. We need enterprises to play their part by: engaging with the education and training sector; acting as champions in their own locale; providing opportunities for students with structured industry placements; and participating in apprenticeship programmes.

This heightened level of collaboration across enterprise and the broad government system is a challenging but essential element in achieving the ambition set out in Enterprise 2025.

## Building resilience in our sectoral mix

There are a number of areas where Ireland can take action over the coming years to underpin the resilience of the enterprise base, the sustainability of employment and be better prepared for the technological and other shocks the global economy may face into the future.

We will embed a systematic approach to sectoral development and, taking a whole of enterprise approach, we will tailor interventions as appropriate to stimulate productivity improvements and greater engagement in RD&I and including leadership, management development and skills.

### Sectoral ecosystems

A more systematic approach to sectoral ecosystem development will be rolled out in the context of the accelerated pace of change, technology disruption, intensified international competition for investment and talent and in order to stimulate entrepreneurship, to respond to impending sectoral disruption and to take advantage of new and emerging areas of opportunity.

	<b>New approach to sectoral ecosystem development to accelerate growth and deliver greater economic impact</b>	
1	<p>Implement a systematic approach to sector ecosystem development in the context of intensified international competition, the pace of change, evolution of sectors and emergence of new areas of opportunity to enhance economic performance, impact and international reputation and visibility by:</p> <ul style="list-style-type: none"> <li>▪ developing Sector Briefs, and working closely with the enterprise development agencies and other relevant government departments, introduce a more systematic and comprehensive approach to horizon scanning that will harness in-market and sectoral knowledge. This strengthened horizon scanning will facilitate the identification of emerging opportunity areas and or disruptive trends, the early assessment of potential and whether or not there are sector specific policy implications that necessitate a policy response;</li> <li>▪ establishing sector specific Ecosystem Development Teams for limited periods to progress key sectoral initiatives; and</li> <li>▪ introducing effective oversight to monitor sector development across the economy together with emerging requirements for policy.</li> </ul>	DJEI Agencies, Govt Depts, Int'l Networks
	<b>Driving all island approaches to sectoral development</b>	
2	Strengthen all-island approaches to sectoral ecosystem development as appropriate and as opportunities arise to deliver greater economic opportunity and potential for investment and job creation.	ITI (and DJEI)

### Building on strengths

These are the sectors in which we demonstrate comparative advantage and they contribute a significant proportion to Ireland's exports. These sectors are continuously evolving and we will tailor our suite of interventions delivered by the agencies to ensure ongoing transformational change and to deepen our global innovative capabilities at the level of the enterprise. These

sectors include ICT, Health Lifesciences, International Financial Services, Agri-Food, Internationally Traded services and Engineering/Industrial products.

	<b>Deepening Ireland's comparative advantage</b>	
3	<p>Strengthen Ireland's comparative advantage by attracting new investments, leveraging State investments in prioritised research areas, effecting continuous transformational change and being open to new areas of opportunity arising through convergence and adjacent possibilities. This involves both an anticipatory and responsive approach in an intensely competitive and fast paced global environment.</p> <p>Coordinated action will also be required involving researchers and education and training service providers.</p> <p><i>The recommendations relating to an enhanced approach to sectoral ecosystem development, trade, strengthened clustering initiatives, enhanced agency collaboration, RD&amp;I, and cross-sectoral/convergence initiatives are all directly relevant. Business environment factors that enhance relative competitiveness with other economies remain crucial to the continued success in these sectors.</i></p>	DJEI, Enterprise agencies

### Realising un-tapped potential

This includes: Marine/maritime; green technologies and environmental services; creative sector (including design service providers); as well as the increasing potential for private provision of international education and healthcare services (including e.g. eHealth). These sectors involve a broad range of sub-sectors and activity which (in general) span a number of government departments. Activities are distributed throughout Ireland, with likely potential for regional initiatives / test beds etc.

	<b>Realising un-tapped potential</b>	
4	<p>Develop and deliver regionally based sectoral initiatives, including collaboration across regional boundaries, taking advantage of the €100 million regional collaborative fund launched by DJEI in 2015, aimed at bringing the key stakeholders together to take the necessary action to deliver jobs and growth based on harnessing regionally based assets.</p> <p><i>The recommendations relating to addressing grand challenges are particularly pertinent and require direct engagement by Departments of Health, Education, Environment and others aimed at delivering increased efficiencies and outcomes while providing opportunity for Irish based enterprises.</i></p>	DJEI
5	<p>Develop the full potential of the Marine economy through the implementation of the Harnessing Our Ocean Wealth strategy.</p> <p>Develop and implement strategies for new areas including eHealth, Healthcare services, Creative Industries and Design.</p>	DAFM Various

### Employment intensive sectors and locally trading sectors and activity

Employment intensive sectors include construction, retail, tourism, primary production<sup>14</sup>, sub-supply and other manufacturing. They are primarily locally trading and are mature, well developed sectors. Digitisation, ‘green’ and design are likely to have a disruptive impact on many of these sectors, offering significant opportunity for enhanced productivity, innovation and sustainable job creation. They are sectors upon which most of our other sectors in the economy rely, and therefore, their competitiveness has a wider beneficial impact across the economy.

	<b>Enhancing the productivity and innovative capacity of locally trading and employment intensive sectors</b>	
6	<p>Develop and implement a programme to target a broader cohort of small enterprises in these sectors (and operating within state aid guidelines) to deliver improved productivity, innovation and competitiveness, including for example the use of innovation vouchers, establishment of Skillnets, management development, mentoring, peer-to-peer networking, lean initiatives and awareness raising.</p> <p><i>The recommendations relating to broader business environment and cost competitiveness are directly relevant.</i></p>	DJEI & relevant actors

### Key drivers transforming sectors

Digital technologies, the green agenda and the use of design have a pervasive impact across all sectors and enterprises in the economy. They can deliver substantial and transformative change, create new opportunities for innovation and growth and deliver enhanced productivity and sustainable jobs.

### Digital

	<b>Ireland a digital economy hot-spot within Europe</b>	
7	<p>Ireland will achieve a leadership position as a digital ‘hot-spot’ in Europe in the adoption and use of advanced ICTs across all aspects of the enterprise economy and the public sector, including initiatives as part of EU’s Digital Agenda for Europe, and we will:</p> <ul style="list-style-type: none"> <li>▪ leverage on our core strengths in enterprise in ICTs (incl. supply chain management; business process outsourcing; manufacturing processes; data analytics; software development; etc.)</li> <li>▪ strengthen our ICT RD&amp;I capabilities;</li> <li>▪ stimulate adoption of technologies across the enterprise base, leveraging expertise within HEIs and public research institutes;</li> <li>▪ meet three quarters of demand for high level ICT skills through domestic supply of graduates by 2018;</li> <li>▪ ensure a favourable regulatory, IP and data security environment;</li> </ul>	Whole of Government

14 Primary production is critical to achieve the ambition for Ireland’s agri-food sector – See also Food Wise 2025, Department of Agriculture, Food and the Marine

	<ul style="list-style-type: none"> <li>ensure the availability of ubiquitous fast speed broadband by 2020; and</li> <li>use public and private partnerships with enterprise and the research community to facilitate technology and market 'test-bedding' to contribute to addressing grand challenges through innovative use of ICTs to develop new products, services and solutions.</li> </ul>	
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### Green technologies

	<p><b>Taking policy actions to achieve our EU commitments and to leverage our natural resources by 2030</b></p>	
8	<p>We will build on our many advantages and will enhance our reputation internationally as a sustainable and green economy, and will:</p> <ul style="list-style-type: none"> <li>enhance our RD&amp;I capabilities and stimulating start-ups and growth in green/clean technology enterprises;</li> <li>stimulate increased focus by enterprises on investing in improving energy efficiencies and minimising waste (including through initiatives such as Lean) and delivering on corporate social responsibility objectives;</li> <li>address barriers and ensure mechanisms to realise the potential from investment in energy sourced from renewables are efficient and effective;</li> <li>implement Food Wise 2025, published in July 2015, with a strong emphasis on environmental sustainability;</li> <li>encourage sustainable approaches to spatial development and planning; and</li> <li>progress smart city-region initiatives (which also leverages ICT capabilities).</li> </ul>	Whole of Government

### Design

	<p><b>Leveraging the potential of design</b></p>	
9	<p>Building on the Year of Design 2015, we will roll-out a strategy for increasing the application of design across the enterprise sector, including initiatives to increase the use of design-thinking and its application in, and potential to, stimulate innovation within SMEs including manufacturing and services activities.</p>	DJEI

## Enhancing overall enterprise performance

We will focus on realising the potential of the whole of enterprise to contribute effectively to Ireland's future economic growth by transforming operations, enhancing productivity and embedding innovativeness.

We will optimise the contribution from entrepreneurship, from Irish owned enterprises by supporting a more aggressive scaling agenda, from locally trading entities by accelerating



productivity growth and competitiveness, and from our FDI as key contributors to Ireland’s economic development and national enterprise policy objectives.

We will deliver an integrated approach to enterprises, ensuring that the range of services on offer from a range of agencies and organisations is coherent and aligned.

We will build on the capabilities and expertise developed in undertaking enterprise related programme evaluations to embed a culture of evaluations within DJEI and the enterprise development agencies and to ensure a continuous feed-back loop to inform effective policy decisions and interventions.

	<b>Strengthening our entrepreneurship ecosystem in an international context</b>	
10	Implement the National Entrepreneurship Strategy to achieve a 25 percent increase in the rate of start-up, survival and scaling of new businesses in Ireland. The National Competitiveness Council will monitor Ireland's entrepreneurship ecosystem and assess national performance against international comparators across a range of key indicators and report to the Minister for Jobs, Enterprise and Innovation on an annual basis.	DJEI/Whole of Government
	<b>Delivering a coordinated approach to attracting mobile entrepreneurs and emerging companies</b>	
11	Establish Ireland as a leading Start-up location for internationally mobile entrepreneurs through developing and promoting the Ireland value proposition that packages the elements to position Ireland as a leading European location for start-ups and fast growing businesses including: the funding environment; IP framework; structured access to Enterprise Ireland's overseas network and its market-led innovation programmes in commercialisation, technology development and diffusion and in internationalisation, marketing and leadership; an enhanced visa regime and extension of the tech visa to other areas of unmet demand in high skilled areas; and place and quality of life attributes etc.	DJEI/ EI/ IDA and DJE
	<b>Growing our Irish owned enterprises to scale</b>	
12	Support a greater number of Irish owned enterprises to grow to scale at an accelerated rate, beyond their current turnover levels. This will require a tailoring of interventions to meet the specific needs of the scaling enterprise, with the objective of delivering to Ireland's enterprise policy objectives to grow exports and employment.	EI
	<b>Attracting, expanding and sustaining Foreign Direct Investment</b>	
13	Implement the Policy Statement on Foreign Direct Investment in Ireland, and deliver on the IDA strategy <sup>15</sup> to attract and sustain investments that contribute to our national enterprise policy objectives.	DJEI/ IDA/EI

15 Winning - Foreign Direct Investment 2015-2019, IDA Ireland, 2015

	<b>An integrated and collaborative approach to supporting enterprises</b>	
14	Deliver an integrated approach to meeting enterprise needs, ensuring that the range of services on offer across the development agencies as a whole is aligned and coherent to business, in areas such as linkages, entrepreneurship, leadership and management development, sectoral ecosystem development, and trade and investment promotion. This includes agencies of other Departments such as Bord Bia in relation to food companies, Fáilte Ireland in relation to tourism, and of entities such as the LEOs, BICs, LEADER and IoTs in relation to small firms and start-ups nationally and regionally.	DJEI and others
	<b>Embedding a system of evidence based policy development to maximise economic impact arising from state intervention</b>	
15	In the immediate term: <ul style="list-style-type: none"> <li>▪ undertake an evaluation/review of Ireland’s trade and investment promotional activities overseas as part of the overall system to stimulate trade and investment; and</li> <li>▪ using the concept of developmental evaluation, identify an appropriate intervention in the short term and undertake an ex-ante review (An example might include the proposed clustering initiatives or grand challenges approach).</li> </ul>	DJEI  DJEI

## Developing and attracting talent for the 21<sup>st</sup> century

### Skills development and education and training

Our ambition is that Ireland will be internationally renowned for its talent, for its highly skilled and adaptive people, equipped with the higher order capabilities required in the 21st century workplace and for its openness to continuous learning. Our people are our primary asset and can differentiate Ireland’s competitive positioning, deliver high levels of productivity and innovativeness. We aim to develop our own people through the education system, to embed a culture of workplace learning and to create an environment that attracts talent from overseas to live and work here. It is important too that we optimise opportunities for participation in the workplace. Access to quality, affordable childcare is pertinent in this regard and the options and recommendations set out in the report of the IDC working group established by the Department of Children and Youth Affairs is being considered by Government<sup>16</sup>.

The Department of Education and Skills is developing a National Skills Strategy and Enterprise 2025 will inform the process from the perspective of future enterprise needs. No assessment of resource implications for the National Skills Strategy and/or for ongoing development of the apprenticeship system has been undertaken during the development of Enterprise 2025.

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16 Report of the Inter-Departmental Working Group – Future Investment in Childcare in Ireland, Options and Recommendations for Government, Department of Children and Youth Affairs, July 2015

	Education and training for the 21st century	
16	<p>Develop a National Skills Strategy to ensure alignment between the future skills needs of the workplace and the education system, so that individuals progressing from our education and training systems are equipped to adapt to the work environment of the future, taking into consideration the following areas in particular:</p> <ul style="list-style-type: none"> <li>▪ higher order skills, attuned to the increased need for strategic and creative capabilities, and project and risk management capabilities to manage in uncertain and more complex working environments;</li> <li>▪ integration and clear career progression through the education and training system - promoting alternative pathways and recognition of prior learning and experience so as to progress along the qualifications ladder; and</li> <li>▪ developing alternative modes of delivery including online offerings, an integrated digital-enabled system, and a wider range of accreditation of learning in particular for the workplace setting.</li> </ul>	DES
17	Double investment and participation in workplace learning and development by enterprises over the period to 2020.	DJEI, DES, Agencies
18	Launch regional skills fora being developed under the DES, to facilitate employer engagement with the education and training system at all levels to enable local delivery of skills needs identified in the regional context.	DES
19	Strengthen the mechanisms and metrics for ensuring delivery on the skills needs identified at sectoral and occupational level through the Expert Group on Future Skills Needs and SOLAS and develop further the communications mechanisms between the EGFSN and higher education and further education and training institutions to respond to identified shortages.	DJEI, DES
20	Develop the new apprenticeship system on an ongoing basis to cover the broad range of skills needed for the economy to ensure the system is resourced to adapt to the changing needs of the workplace and employers over the coming decade.	DES

### Future ways of working

Technological and work organisation changes are having profound implications for how people do their job, how they learn and shape their career pathways, from where they work including for example homeworking and teleworking<sup>17</sup>, and how employers organise their activities. There is a need to both strengthen our understanding of new ways of working and policy implications for employees and employers and to ensure we have the required flexibility to succeed for the future.

	<b>Future ways of working</b>	
21	Develop new partnership approaches at enterprise level, based on industrial relations that encourage participative approaches to securing the sustainability of the business and that provides for continuous learning and upskilling for workers to respond to the competitive demands to increase productivity and adaptability.	DJEI, DES
22	Ensure that in the context of future ways of working our employment legislation and labour relations architecture remains fit for purpose and is grounded on evidence-based research and data collection on new forms of work, workplace innovation, workplace learning etc., and takes account of the impacts on individuals and enterprises and of the policy implications arising.	DJEI

### Leadership and management capability

Strong leadership is critical to drive the growth, innovation and adaptability required of the successful enterprise over the coming decade. Strong leaders are essential to drive our scaling agenda and to raise the profile internationally of our highly innovative Irish owned enterprises. Managers and leaders will increasingly need to motivate an empowered employee, to harness the capabilities of a multi-disciplinary, multi-cultural and sometimes dispersed workforce.

Our evidence shows that management capability is the primary driver of a successful company – at whatever scale.

	<b>Deliver a demonstrable uplift in leadership and management capability across the enterprise base</b>	
23	Achieve a demonstrable uplift in business leadership skills to drive innovation and internationalisation across a broader cohort of enterprises, and in management capability across the enterprise base, so that all firms have the potential to achieve a one-step-up to higher business performance and growth, using the most appropriate intervention to deliver to the specific needs of the enterprise, scale and stage of development.	DJEI, DES, EI, IDA, LEOs

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17 Investment in broadband infrastructures is also relevant – refer to Action 54

### Employment regulation

We will ensure that Ireland continues to create the environment for quality jobs, enabling flexibility without exploitation, and that we have a responsive regulatory environment that remains attuned to changing work organisation and society over the coming decade.

	Employment regulation	
24	<p>Ensure the Workplace Relations Commission can respond to the changing needs of the workplace, employees and employers over the next decade.</p> <p>A continued focus on:</p> <ul style="list-style-type: none"> <li>▪ ensuring that the statutory wage setting mechanisms remain responsive, flexible, fair, and fit for purpose; and</li> <li>▪ engaging proactively with EU initiatives and EU employment law to ensure that the EU legislative framework takes account of changes in work organisation and the evolving needs of the Irish economy.</li> </ul> <p>Review and update employment legislation and ensure it is fit for purpose for the coming decades.</p>	DJEI

### Enhancing employment prospects

There are a number of activation initiatives in place that remain relevant as set out in Pathways to Work 2015. As we achieve the ambition set out in Enterprise 2025, the demand over time for these initiatives will likely reduce. In a changing environment, we need to ensure that individuals are equipped with the relevant skills and competences that meet the needs of enterprise and reduces risk of unemployment.

	Enhancing employment prospects	
25	<p>Mainstream best practice from focused labour market activation programmes within the further education and training and higher education system such as Springboard and Momentum to provide skills in demand by employers, improve transitions from education to employment, and reduce the risk of unemployment.</p>	DES, DSP

## Optimising regional potential – place-making

There is a strong interdependence between place-making (the planning, development and creation of an attractive environment) and enterprise development. We will take the policy actions necessary to realise the potential of the regions throughout Ireland to contribute to, and benefit from, sustainable employment and growth over the next decade. We will ensure that our national policies can be translated effectively into regional action, informed by our understanding of regional strengths and potential.

We aim to harness regionally based actors to stimulate collaborative action to enhance the potential for employment creation in their locale<sup>18</sup>. Effective information sharing between enterprise and spatial policy development and implementation will be key to achieving our ambition.

Urban areas will play a key role in realising the potential of our regions throughout Ireland. The development of the National Planning Framework and Regional Spatial and Economic Strategies (informed by the Regional Action Plans and Enterprise 2025) will take account of the role that regional growth centres can play in Ireland's future economic development. We need also to remain aware that the international visibility and reputation of our capital city is crucial for the continued attraction of FDI, entrepreneurship, tourism and talent. Dublin, as Ireland's main national access point is a key attractiveness factor for *any* ultimate location in Ireland and IDA Ireland has a strong regional focus in its recently published strategy.

Ireland has the potential to see regional unemployment rates no higher than one percentage point away from the national employment rate by 2020.

	Realising the potential of our regions	
26	Develop and publish the National Planning Framework (the successor to the National Spatial Strategy) to set out the spatial forward planning framework and overarching principles, including a clear urban policy that reinforces the importance of Dublin as our Capital city and of other city regions throughout the country, and that informs strategic national investments (with regional impact) and priorities over the coming decade.	DECLG

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<sup>18</sup> This includes a broad range of actors, including the development agencies (EI, IDA, Údárás na Gaeltachta), Local Enterprise Offices, Local Authorities, Western Development Commission, Business Chambers and associations and others

27	Roll out the Action Plan for Jobs at regional level (NUTS III areas).	DJEI
28	<p>Support the development of regional collaborative initiatives among private and public sector actors in the regions that promote innovation and productivity growth through competitive funding calls over the period to 2020. It is envisaged that the funding calls will attract some matching funding from other regional or private sources. The three funding areas include:</p> <ul style="list-style-type: none"> <li>▪ €5 million focused on community driven enterprise initiatives;</li> <li>▪ €5 million focused on providing additional funding to LEOs on foot of innovative proposals specific to their region; and</li> <li>▪ €40 million to support significant projects to improve or leverage identified enterprise capability in the region.</li> </ul> <p>Competitive calls for proposals will be informed by the Regional APJs, with the first tranche of the regional fund launched in 2015 to stimulate collaborative action and novel approaches to harness regional assets with a view to realising potential and accelerating growth.</p>	DJEI/EI
29	Develop the Regional Spatial and Economic Strategies (RSES) led by DECLG, in conjunction with the Regional Authorities, DJEI and others, with a strong focus on creating competitive regions in which enterprise and entrepreneurship can succeed. The RSESs will provide an overarching framework for the creation of new places with attractive characteristics and infrastructures to stimulate enterprise investment and to realise economic potential.	DJEI, DECLG
30	Formulate and implement Local Economic and Community Plans to maximize the potential of local areas and guide local authority action to contribute to the collaborative development of strong regional economic growth centres.	Local Authorities
31	Strengthen the role that HEIs will play within their regions for a strengthened and richer industry liaison system to stimulate greater engagement with enterprise (and SMEs in particular) across a broad agenda including innovation, knowledge sharing and dissemination, peer networking and entrepreneurship with the aim of accelerating enterprise growth.	DES, DJEI, HEA, EI, IDA
32	Prioritise place-specific infrastructure deficits that are impacting negatively on the attractiveness of our city regions for enterprise investment. This will include orienting the Public Capital Programme toward investments that support business needs and targeting European investment/development funding over the 2015-2025 period.	DPER, DTTAS, DECLG, DJEI
33	Roll out a 5-year €150 million capital investment programme to help attract more foreign investment and jobs into each region. This programme will include investments over the coming years in building advanced manufacturing and office facilities in Sligo, Tralee, Castlebar, Galway, Dundalk, Limerick, Athlone, Carlow and Waterford.	IDA

## Embedding innovativeness in our enterprises and systems

Successful enterprises are those that innovate. Innovation enables enterprises to differentiate their product and services offerings, to develop new ways of reaching customers and markets, to disrupt existing business and revenue models, and to improve processes, systems and organisational structures. Innovation plays a crucial role in creating competitive advantage, enhancing productivity and ultimately increasing profitability so that a company can reinvest in its future growth.

Since the early 2000s the State has invested significantly in developing Ireland’s RD&I infrastructures and capabilities. Investments in scientific excellence; in developing highly qualified researchers that meet the needs of our innovative enterprises; in driving collaborations and linkages between our research centres and enterprise; are key ingredients for Ireland’s future economic development and growth.

The Government will adopt a new Strategy for Science, Technology and Innovation later this year and will set out specific actions. From the perspective of enterprise, we aim to build on our investments and achievements to date, increasing enterprise RD&I activity and leveraging state investments for competitive advantage.

	Enhancing innovation in enterprise	
34	<p>Bring forward a successor to the Strategy for Science, Technology and Innovation, which will underpin the development of Ireland as an innovation economy, built on excellence in strategic areas of research, on market-driven translation into commercial opportunities of the technology and research capabilities and on entrepreneurship. Key elements of innovation policy over the coming decade will include:</p> <ul style="list-style-type: none"> <li>▪ building on existing research capacity and infrastructure, ensuring that a broad base of support is in place across the full continuum of research and including at the higher (closer to market) Technology Readiness Levels;</li> <li>▪ exploring the options for a cross government ‘grand challenges’ approach that ‘creates’ a market for innovative products and services and addresses specific national priorities;</li> <li>▪ using the State’s circa €8.5 billion procurement budget to stimulate innovation in SMEs to develop solutions to meet the needs of the public sector including through rolling-out further Small Business Innovation research (SBIR) initiatives;</li> <li>▪ ensuring that Ireland’s Intellectual Property (IP) framework remains fit for purpose and stimulating an increase in activity by enterprises across all forms of IP;</li> <li>▪ promoting innovation in services and business processing with measures tailored to the unique characteristics of this activity;</li> <li>▪ ensuring supply of researchers and human capital to underpin an innovative enterprise sector; and</li> <li>▪ promoting greater collaboration between enterprise and HEIs including increased mobility between industry and academia.</li> </ul>	DJEI



35	Establish appropriate governance and institutional arrangements to facilitate a cross government approach to implementation of the SSTI so as to create a dynamic, cohesive and well-functioning national innovation eco-system that delivers economic and societal impact and outcomes.	DJEI
36	Achieve a 30 percent increase in the number of Irish and foreign owned enterprises with innovation activities of scale, and broaden the base of RD&I activity in Irish based enterprises generally.	EI, IDA, LEOs
37	Monitor our R&D Tax credit offering to ensure it has an appropriate impact on R&D activity in enterprise, is internationally competitive, is attuned to evolving enterprise sectors and activities, is not overly complex or administratively burdensome on business and to ensure clarity and consistency for enterprise.	DoF
38	Drive participation in EU and international research programmes in areas of relevance and impact to the economy and enterprise base so that we achieve the ambitious target of €1.25bn for Horizon 2020, led by the national support network based in Enterprise Ireland.  Deliver the ex-post evaluation of the FP7 programme and ex-ante evaluation of Horizon2020 so that we take the necessary and appropriate actions to maximise potential and impact towards the target of €1.25bn drawdown by 2020.	DJEI/EI

### Innovativeness – a mind-set, culture and way of working

The concept of innovativeness envisages a pervasive innovation, implemented by routine across operations, involving a high degree of entrepreneurialism amongst the management team and extending across the workforce as a whole. It involves strong leadership, management capability and a culture of problem-solving and learning within the workplace – elements that relate to the absorptive capacity of the enterprise. We know that in general, absorptive capacity in SMEs needs to be strengthened and that we need to encourage more foreign owned entities based here to engage in RD&I activities.

We already have initiatives in place that can be rolled out to a wider enterprise base that will set the context for innovation, for new product, process and services development. For example, an enhanced understanding is developing of the pervasive nature and end-to-end business implications of Lean principles that is fundamentally about a change in culture and ways of working that harnesses people’s creativity and problem-solving capabilities.

	<b>Facilitating a culture of innovativeness across all of enterprise</b>	
39	Develop new approaches appropriate to the scale and capability of the firm to boost the absorptive capacity of the enterprise base and to stimulate a shift in culture and mind-set including: <ul style="list-style-type: none"> <li>▪ the introduction of Lean principles and approaches to problem solving and including manufacturing and services activities;</li> <li>▪ broadening the reach of programmes catering to management development for the innovative enterprise; and</li> <li>▪ stimulating cross industry-research community mobility through for example, secondments and placements.</li> </ul>	EI, LEOs, IDA  EI, LEOs  EI, IDA

40	Ensure our regulatory environment remains sufficiently agile in an increasingly disruptive innovative environment to accommodate sectoral development and emerging areas of potential.	Various
41	Strengthen the role of NSAI as a crucial element of Ireland’s sectoral and innovation ecosystem, by promoting the benefits of standards to the widest cross section of industry and ensuring that its focus is aligned with Enterprise Policy 2025 and informed by the future needs of enterprise.	DJEI, NSAI
	Raise awareness of the importance of standards in the context of RD&I and encourage more companies to participate in the standards setting process.	NSAI, EI

## Connectedness – internationally, nationally and regionally

As a small open economy Ireland and its people need to be connected internationally.

Our trade relations, policies and strategies, our connections to global value networks, our approach to developing higher visibility clustering activities and openness and engagement in all aspects of the digital economy are pertinent and critical to enterprise growth and economic performance.

### Trade, tourism and investment

Irish enterprise and Government have successfully realised the growth targets set out in the Trade, Tourism and Investment Strategy (2010- 2015). The following elements will be reflected in a successor to that strategy to achieve specific objectives over the next five years and beyond.

	Realising our ambition	
42	<p>Deliver on our trade, tourism and investment potential over the next five years, to include:</p> <ul style="list-style-type: none"> <li>▪ growing the exports of Irish owned firms by 6-8 percent per annum to 2020;</li> <li>▪ securing 900 new FDI project investments over the period to 2019 as set out in IDA strategy (2015);</li> <li>▪ increasing tourism revenue to €5 billion and overseas visitor numbers to 10 million annually by 2025 as set out in the tourism policy statement (2015);</li> <li>▪ broadening the geographic market focus of the Irish owned enterprise base beyond UK markets to reach exports of between €5 and €6 billion by 2020;</li> <li>▪ further diversifying Ireland’s export markets to the Eurozone and high growth markets;</li> <li>▪ increasing the number of Irish owned firms that export to more than one country;</li> <li>▪ increasing the export intensity of the indigenous firms to between 55 and 60 percent from just over 50 percent currently; and</li> <li>▪ further diversifying the sectoral profile of exports overall.</li> </ul>	DJEI, DTTAS & relevant State Agencies

	<p>We will also implement:</p> <ul style="list-style-type: none"> <li>▪ a more structured approach to dissemination of in-market intelligence garnered by the agencies and the embassy network that maximises opportunities;</li> <li>▪ a beginning to end process to optimise Irish interests in negotiation and implementation of EU trade and investment agreements, in particular, the Transatlantic Trade and Investment Partnership, China, Japan, India and ASEAN; and</li> <li>▪ six-monthly reviews of Ireland’s trade, tourism and investment performance and of the operational effectiveness of Local Market Plans.</li> </ul>	<p>EI, IDA, other Agencies &amp; DFAT/embassy network</p> <p>DJEI &amp; relevant Depts &amp; Agencies</p> <p>DFAT, DJEI &amp; relevant Depts &amp; Agencies</p>
43	Bring forward a successor to the Trade, Tourism and Investment Strategy 2010-2015 that incorporates the elements set out above.	DFAT, DJEI & other Depts & Agencies

**Global value networks (GVNs)**

	<b>Deepening our connections with global value networks</b>	
44	<p>Through the development agencies, strengthen Ireland’s engagement in GVNs, leveraging our distinctive enterprise base of globally diverse foreign owned multinationals and innovative Irish owned enterprises, in order to realise accelerated growth, value add and economic impact.</p> <p>Focus on opportunities to capture increased value to Ireland from services GVNs, including the services component within manufacturing and contract manufacturing services.</p>	DJEI & Enterprise Agencies

**Clustering**

Clustering activity involves the interaction between enterprises, HEIs, researchers and other players in the eco-system that ultimately delivers mutual gain above what might otherwise be achieved from ‘going it alone’. Clustering activity in Ireland can be described as nascent relative to other developed economies which have used clustering initiatives as an effective policy tool for enterprise and economic development for many years. This initiative may provide a vehicle through which the grand challenges approach can be progressed.

	<b>Sustained clustering activities of scale and with international visibility</b>	
45	Design a new approach for a National Clustering Initiative in the key sectors of strength building on the existing initiatives through competitive calls that seed cluster activities, to stimulate more extensive clustering on a sustained basis, at a scale and depth that delivers to enterprise policy goals and has visibility and stature in an international context.	DJEI & Enterprise Agencies

### Data-intensive world

Reaping the benefits of the increasingly digital world requires that we provide a robust and well balanced regime for the digital economy and engage effectively with our EU partners.

	Ensuring a digital friendly regime	
46	<p>Ensure that Ireland sustains its leadership position in providing an internationally recognised robust and well balanced regime for the digital economy that protects individual interests while facilitating enterprise development and growth including, through:</p> <ul style="list-style-type: none"> <li>▪ updating our intellectual property legislation to ensure that it is fit for purpose in the digital age;</li> <li>▪ close engagement with our EU partners in relation to the advancement of the EU's Digital Single Market agenda in all of its aspects;</li> <li>▪ ongoing and regular review of global and international developments and timely policy responses if/as needed; and</li> <li>▪ the full implementation of Ireland's data protection roadmap, and National Broadband Plan.</li> </ul>	DJEI, DCENR, DJE, DPC

### Excelling in getting the basics right

We will continue to focus on enhancing the broader business environment and on ensuring that:

- we have a comprehensive and competitive funding environment to support our enterprises' ambitions through from pre-start up to maturity;
- our tax regime remains internationally competitive (and especially relative to our nearest trading partners), supports productive activity and provides certainty, stability and predictability for enterprise and entrepreneurs<sup>19</sup>;
- we drive productivity growth as a national imperative;
- we focus on maintaining relative cost competitiveness and on driving competition across all sectors of the economy; and that
- we invest in, or enable investment in productive infrastructures.

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19 Department of Finance engaged in a consultation process in June 2015 in relation to tax and entrepreneurship

### Finance for growth

Delivering on the actions set out below will require engagement with a broader range of stakeholders including the enterprise development agencies and other bodies.

47	<b>Establishing a robust funding environment for enterprise</b>	
	Drive competition in the lending market and the provision of the widest range of services to meet the needs of internationally trading and innovative enterprises.	DoF
	Work with financial institutions (both nationally and internationally) to facilitate the creation of a comprehensive and competitive funding environment to support our enterprises' ambitions through from pre-start up to maturity including to: <ul style="list-style-type: none"> <li>▪ Stimulate greater equity and quasi-equity investment;</li> <li>▪ Encourage the use of capital markets in the funding eco-system for indigenous companies, in areas such as early stage listings;</li> <li>▪ Strengthen the capabilities of Irish owned enterprises in terms of strategic use of funding options for growth; and</li> <li>▪ Promote new alternative sources of funding such as peer-to-peer lending and ensure our regulatory regime is fit for purpose and adaptive to new and alternative forms of funding/financing.</li> </ul>	DoF, DJEI, DPER, EI
	Engage with European and International financial institutions and funding streams - ensuring that we optimise the potential to enhance Ireland's funding environment over the coming years.	DoF, DPER, DJEI, EI

### A growth friendly tax regime

48	<b>We will continue to maintain our commitment to transparency and stability and on enhancing the environment for business investment, innovation and entrepreneurship</b>	
	We will continue to implement the changes set out in the tax roadmap for Ireland's tax competitiveness , and will: <ul style="list-style-type: none"> <li>▪ maintain the competitiveness of our Corporation Tax Rate;</li> <li>▪ continue to expand Ireland's tax treaty network; and</li> <li>▪ implement a Knowledge Development Box in 2016, within the guidelines agreed at various international fora.</li> </ul>	DoF
	We will continue to enhance the relative competitiveness of the taxation system (and especially relative to our nearest trading partners), and will: <ul style="list-style-type: none"> <li>▪ support entrepreneurship, start-ups and the competitiveness of Irish SMEs that includes a range of aspects such as investment incentives, CGT etc.;</li> </ul>	DoF

	<ul style="list-style-type: none"> <li>▪ address disincentive effects within the tax and social welfare systems affecting the self-employed, taking into account, and with regard to, the differing treatments between self-employed tax payers and PAYE workers within a stated timeframe; and</li> <li>▪ ensure that existing initiatives are subject to periodic review to enhance effectiveness and optimal levels of take-up.</li> </ul>	
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### Productivity

49	<b>We will drive productivity growth as a national imperative and support enterprises to get to international benchmarks relevant to their sectors</b>	
	The National Competitiveness Council will place a high priority on the measures required to drive productivity growth in the economy over the next five years, as we seek to grow jobs, improve standards of living, and international competitiveness.	DJEI/NCC
	Sustain the focus on productivity performance in deliberations on wage increases and emphasise the need, from a sustainability and competitiveness perspective, for wage growth to be underpinned by productivity.	DJEI, DPER
	<i>Many of the other recommendations set out in this strategy are directly relevant to driving productivity growth including those relating to education and skills, science, technology and innovation, infrastructure investments, interventions at the level of the firm focused on capability building etc.</i>	

### Cost competitiveness

50	<b>We will take the actions necessary to improve Ireland’s relative cost competitiveness in the areas that are within our control</b>	
	<b>Energy</b>	
	Position cost competitiveness as well as environmental considerations at the centre of Ireland's national energy policy and its negotiating position in relation to environmental and energy policy at EU level, with improvements in Ireland’s environmental sustainability done at least cost.	DCENR
	Bring forward measures to secure the optimal functioning of the North-South Integrated Single Electricity Market so that future energy needs are met at least cost.	CER

	<b>Waste</b>	
	Promote private investment in and competition between cost effective, commercially viable, integrated and diversified waste treatment options across the waste management spectrum through the framework of the new regional waste management plans <sup>20</sup> . These options include energy recovery thermal facilities, which can play a role in meeting renewable energy targets.	Local Authorities
	Implement the EU's environmental obligations in the most cost effective manner, and ensure that Ireland's negotiating position on EU waste policy issues is informed by enterprise competitiveness as well as environmental considerations.	DECLG, DJEI
	<b>Property</b>	
	Drive the efficient and productive use of land, discouraging land-hoarding and helping to resolve the current housing and commercial property challenges, including consideration of mechanisms such as an annual site value tax.	DECLG, DoF
	Fully implement the Construction 2020 Strategy, including creation of a coherent policy response and regulatory certainty around planning and zoning, to ensure delivery of an appropriate mix of commercial property.	DoT and other relevant Departments
	<b>Working with enterprise to increase efficiencies</b>	
	Develop initiatives to ensure that businesses are aware of how best to: <ul style="list-style-type: none"> <li>▪ reduce their energy use; and to</li> <li>▪ exploit waste management reduction processes and technologies.</li> </ul>	DJEI, SEAI, Enterprise Agencies, Business Rep Bodies
	<b>Business regulation</b>	
	Drive the system-wide initiative to reduce the regulatory administrative burden for businesses under the guidance of the High Level Group on Business Regulation.	DJEI and other Govt Departments
	Raise awareness and better inform business of the regulatory and compliance information applicable to them informed by a review of the functionality of the web portal <a href="http://www.businessregulation.ie">www.businessregulation.ie</a> .	DJEI and other Govt Departments

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20 Refer also to A Resource Opportunity, Waste Management Policy in Ireland, DCENR, 2012 which sets out how Ireland can minimise waste while maximising the resources we can recover from waste (resource efficiency)

### Competitive markets

In terms of the future competition policy agenda, from an enterprise perspective, it is important that progress is achieved on competition issues where they affect business input costs, including the regulated sectors, such as energy, waste and the construction sectors. Implementation of this agenda lies involves the CCPC and also the relevant sectoral regulators.

	<b>Strengthening competition</b>	
51	<p>Drive and promote competition across all market sectors of the economy to inter alia address barriers to entry and create a level playing field for all entities.</p> <p>In this context, set benchmarks to be achieved on a continuous basis in areas for particular action.</p>	<p>DJEI/CCPC, Relevant Govt Depts/  Sectoral Regulators</p>

### Infrastructures

Much of the investments in infrastructures will be made by the private sector over the coming decade. We will continue to focus on putting in place the appropriate policy framework to stimulate investor confidence in long-term projects (e.g. to provide regulatory and planning certainty).

52	<b>Delivering sustainable, reliable and quality transport networks, water, energy and telecoms</b>	
	Starting with the Government's new Infrastructure and Capital Investment Plan to 2021, prioritise productive investment in line with the needs of enterprises competing internationally, paying particular attention to the areas set out below where funded from the exchequer.	DPER
	<p><b>Energy:</b></p> <p>Increase electricity interconnection to the North, Britain and continental Europe and diversify gas sources and supplies (installation of a twin gas pipeline at Moffat and new gas storage facilities) to ensure security of supply.</p>	DCENR
	<p><b>Water services:</b></p> <p>Deliver on Ireland's potential to make water services a competitive advantage in the attraction of mobile investment and the development of indigenous enterprise in water intensive sectors in the longer term.</p> <p>Ensure that Irish Water prioritises the medium and longer term investments required to address enterprise needs and drives efficiencies in water service delivery - particularly by addressing urgent service constraints in Dublin, and ensuring sufficient capacity in large regional urban centres. Priority for required capacity and quality levels should be given to enterprise and development zone locations.</p>	<p>CER, DECLG</p> <p>CER, DECLG</p>



	<p><b>International and internal access:</b></p> <p>In <b>air transport</b> implement the 2015 National Aviation Policy to help secure new investment in Ireland's international connectivity, and provide regulatory certainty. In particular investment will need to accommodate the trend towards larger aircraft, and development of Dublin as a hub airport, both of which can help ensure competitive direct access for business passengers, tourists, and freight to long haul destinations in existing and emerging growth markets;</p> <p>In <b>sea transport:</b> Implement the 2013 Ports Policy framework such that the future needs of maritime connectivity are periodically reviewed; that access to a wide range and frequency of port services at competitive prices is ensured; and that deeper water facilities are provided at Irish ports that can accommodate the international trend towards larger shipping vessels;</p> <p>In <b>land transport:</b> Invest to maintain, renew and improve the network to efficiently address congestion and to address bottlenecks in key urban centres; increase use of Intelligent Transport Systems; improve connections to key seaports and airports; underpin identified national and regional spatial planning priorities (including improving access between main urban centres where required and providing access to poorly served regions); and support large-scale employment proposals<sup>21</sup>; and</p> <p>Ensure that our regulatory environment is capable of facilitating the provision of safety focused, cost optimal services.</p>	<p>DTTAS, CAR</p> <p>DTTAS</p> <p>DTTAS, NRA, NTA</p> <p>DTTAS</p>
	<p><b>Telecommunications:</b></p> <p>By 2020, under the National Broadband Plan, secure investment in the provision of high speed and competitively priced broadband services to ensure that no region of the country is disadvantaged<sup>22</sup>.</p> <p>Promote and facilitate the provision of the resilience and low latency that enterprises and particularly data intensive activities require, and work with the market to accommodate ever increasing transatlantic data capacity through direct international fibre connections to Europe and the US<sup>23</sup>.</p> <p>Take a proactive approach to the shaping of the European Commission's plans to further develop the digital single market, and ensure that EU spectrum policy continues to allow Ireland discretion to use the spectrum innovatively and efficiently.</p>	<p>DCENR</p> <p>DCENR</p> <p>DCENR, COMREG</p>

21 Refer also to Investing in our Transport Future – A Strategic Investment Framework for Land Transport, Department of Transport, Tourism and Sport, August 2015

22 The draft Broadband Intervention Strategy, published in July 2015, sets out the Government’s proposals to ensure that all business and citizens will have access to high speed broadband services by 2020. Commercial investment in broadband infrastructure and services since the National Broadband Plan (2012) has exceeded expectations

23 It was announced in April 2015 that funding has been secured for a high-speed fibre-optic network between New York and County Mayo. Construction is scheduled to begin in the summer of 2015, and be ready for use in early 2016

## Effective execution

### Policy interconnectedness – cross government commitment

Enterprise Policy does not sit in isolation – other Departments have a key role to play in delivering on the differentiated eco-system – aware of, and informed by, the evolving needs of enterprise in an intensely competitive global environment. Moving toward a systems approach, DJEI plays a key role as the advocate for enterprise.

The strategic actions set out in this report require the commitment of government departments and a consistent, coordinated approach to ensuring a robust, agile policy system remains in place - with sustainable job creation and growth at the core as the means by which better standards of living can be achieved by all. We will take a whole of government approach to progressing implementation of Enterprise Policy 2025, building upon the existing Action Plan for Jobs process.

	A systems approach to delivering on our ambition	
53	Ensure a whole-of-government approach to progressing implementation of Enterprise 2025 to establish a top three competitiveness position, to boost productivity and innovation in the public and private sectors, to sustain full employment and to improve living standards over the longer term.	DoT, Gov Depts

### Engaging effectively with the EU

Ireland’s policies are informed (to a great extent) by EU. It is important that such discussions are informed by our enterprise policy objectives. We need to ensure that the priorities for Ireland’s ongoing engagement with EU in a range of fora are informed by this Enterprise Policy 2025 and that there is a continuous feed-back loop to facilitate and inform any policy flexibilities required in response to new and emerging external influences, while maintaining a focus on Ireland’s longer term enterprise policy objectives.

	Engagement with EU	
54	To ensure that Ireland remains an attractive place for Irish owned enterprise to grow, and to win new investment in high-technology areas from foreign and Irish owned enterprises for Europe, we will pursue an active policy at EU level to accelerate progress on: developing the EU Single Market for goods and services; European competitiveness and reform; on international trade agreements to provide access to international markets, including the completion of the TTIP; and to influence progress at WTO level in the removal of all barriers to trade with the aim of achieving positive outcomes.	Gov Depts

### Data on enterprise performance

In a context of a changing environment for enterprise generally, there is an emerging lack of data in certain areas important for measuring enterprise policy objectives and outcomes.

	Strengthening data collection	
55	Strengthen data collection and monitoring of metrics in relation to the expanded range of international business expansion modes, including ODI and M&A with a particular focus on determining more accurately the economic impact of such activities within the Irish economy.	DJEI, CSO
56	Adapt existing surveys to include relevant questions that will serve to increase our understanding of where and how cross cutting technologies and disciplines are being applied and where and how they add value (ICTs, Green and Design). Such analysis would serve to inform the development of policies and facilitate ongoing monitoring of developments.	DJEI, CSO

### Measuring success

Measurement itself is complex and no one measure shows the complete picture. At the same time, it is important that we focus on a number of overarching metrics complemented by firm level performance metrics to assess economic and enterprise performance. The Action Plan for Jobs 2015 has placed a heightened focus on impact and outcomes arising from the broad range of actions it sets out<sup>24</sup>. The National Competitiveness Council (NCC) undertakes a comprehensive analysis and benchmarking of Ireland’s business environment against international comparators on an annual basis<sup>25</sup> across a range of competitiveness indicators, broadening analysis to encompass for example the environment for entrepreneurship and clustering.

There are many factors that impact upon an individual firm’s performance, and therefore upon the aggregate of enterprise performance and its contribution to Ireland’s future economic growth. As a small open economy, global factors are outside of our control. Nevertheless we need to have visibility on whether or not the actions being taken by government and its agencies to support the development of enterprises and actions taken by enterprises themselves are making a difference.

Appendix I sets out the suite of metrics by which we will measure success, both in terms of overarching national outcomes and at the level of the enterprise. They are informed by existing strategies including the Spring Economic Statement, EU2020 strategy, agency strategies and international norms (where applicable). The metrics set out a baseline (most recent) performance and future potential to 2020. Additional relevant metrics will be set out in the forthcoming National Skills Strategy and Strategy for Science, Technology and Innovation informed by the ambition set out here in Enterprise 2025.

<sup>24</sup> See Action Plan for Jobs 2015, Annex 2 Strategic Ambitions, Examples of Impact Metrics and Action Linkages

<sup>25</sup> Ireland’s Competitive Scorecard 2015, National Competitiveness Council/DJEI



# Section A

Setting the context



## The economic context

### A challenging decade

The past decade spans a dramatic period for Ireland's economy. It encompasses a time of high growth driven by the construction boom, high levels of personal indebtedness and consumption, followed by a deep recession that was triggered by a confluence of international and national factors. It is not intended to dwell on the challenges that Ireland has faced (and continues to face in some instances) as a result.

We know that the impact of the downturn was stark. The GDP growth rate in Ireland fell sharply to minus 2.1 percent in 2008, with a further steep decline to minus 5.5 percent in 2009<sup>26</sup>. The unemployment rate in Ireland peaked at 15 percent in Q1 2012<sup>27</sup>. In terms of jobs, 330,000 jobs were lost in the period 2008-2012, down from a peak employment of 2.16 million.

### A focus on reform and restoration

Ireland successfully exited the EU/IMF programme<sup>28</sup> in December 2013, having made significant progress in restoring the stability of the public finances, restructured and ensured the capitalisation of the banking sector, and carried through structural reforms to the Irish economy. The government published the Medium Term Economic Strategy (MTES) in 2013 that set out an overarching framework for social and economic policies being developed across Government over the period 2014-2020. It set out commitments aimed at recovery with an ambitious aim to reach full employment by 2020 - an ambition that anticipated having 2.1 million people in employment by then.

#### Recovery in economic growth and job creation

Since publication of MTES, Ireland has continued to outperform its budgetary targets, and stands to bring the budget deficit, which hit a peak of 11.5 percent in 2009, below the interim Stability and Growth Pact target of 3 percent of GDP in the current financial year<sup>29</sup>.

While a modest recovery in economic activity had been underway since 2011, growth in 2014 was beyond what had been expected. Initially led by the exporting sectors, the recovery became more broadly based in 2014, with domestic demand making a positive contribution to economic growth for the first time since the crisis began. Ireland emerged as the fastest growing economy in the Euro area, registering 5.2 percent GDP growth (6.9 percent GNP) in 2014. This compares

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26 CSO, National Accounts (Quarterly)

27 CSO, Quarterly National Household Survey (QNHS)

28 EU/IMF Programme of Financial Support for Ireland, 16 December 2010 (available at <http://www.finance.gov.ie/sites/default/files/euimfrevised.pdf>)

29 Budget 2016 has targeted a 2.1 percent deficit for 2015. Ireland's Stability Programme April 2015 Update - Restoration of order to the public finances has been supported by wide-ranging reforms to the budgetary architecture post-2008, including introduction of medium term expenditure frameworks, public spending codes, value for money policy reviews, performance budgeting, establishment of the Irish Fiscal Advisory Council, and a new Budgetary Framework

with a 1.3 percent GDP average growth in the EU-28, and 0.9 percent for the Euro area<sup>30</sup>. Some of this recovery is cyclical, reflecting the strong rebound from the crisis, but also owes much to strong net exports. Combined with depreciation of the euro, Irish competitiveness has recovered most of the deterioration recorded during the boom years, which facilitated a reallocation of resources towards the tradable sectors of the economy.

A total of 126,000<sup>31</sup> jobs have been created since the implementation of the Action Plan for Jobs (APJ) in 2012. The APJ process initiated in 2012 (and subsequent annual plans 2013-2015) has served to ensure that all of Government is focused on the priority agenda to stimulate job creation. Developed by DJEI and led by the Department of the Taoiseach, the APJ sets out a suite of actions that will be delivered across government in a given year. A third of all jobs lost during the crisis have now been regained.

In the 2015 APJ, the Government announced that it had brought forward its target of having 2.1 million in work to 2018, two years ahead of target<sup>32</sup>, and its target of creating 100,000 extra net jobs is on track to be achieved one year earlier than originally planned<sup>33</sup>.

## Economic growth forecasts

The growth forecasts outlined by the Department of Finance in Budget 2015 have been revised upwards, initially by the Spring Economic Statement<sup>34</sup>, and again most recently by the Economic and Fiscal Outlook, prepared in the context of Budget 2016 published in October of this year<sup>35</sup>.

According to the Economic and Fiscal Outlook, the level of GDP per person passed its pre-crisis peak in the second quarter of 2015, with GNP per capita marginally behind. This provides strong evidence of the sustained nature of the economic recovery currently underway and particularly remarkable given the scale of the downturn. Export growth has been strong and the OECD and IMF are projecting a continuation of relatively strong growth in Ireland's main markets. Significantly, the recovery in domestic demand has become more firmly established, with personal consumer expenditure projected to increase by 3.5 percent in 2015 overall and the same rate of growth predicted for 2016. Domestic demand is set to be the primary driver of growth in 2016<sup>36</sup>.

Overall, GDP growth of 6.2 percent is now projected for 2015, while an increase of 4.3 percent is expected for 2016.

The outlook for the Irish economy over the medium term is broadly positive with forecasts assuming a potential growth rate averaging around 3.5 percent per annum over 2017 to 2021.

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30 Eurostat, Real GDP growth rate – volume, see <http://ec.europa.eu/eurostat/web/national-accounts/data/main-tables>

31 Quarterly National Household Survey Q2 2015 seasonally adjusted, CSO July 2015

32 See Action Plan for Jobs 2015

33 Spring Economic Statement, Department of Public Expenditure and Reform, Department of Finance April 2015

34 Ibid

35 Economic and Fiscal Outlook, Department of Finance, October 2015, See <http://www.budget.gov.ie/Budgets/2016/2016.aspx>

36 Ibid

A more even contribution from net exports and domestic activity is expected over the medium term. These positive expectations for Irish growth are largely echoed, at least for 2015 and 2016, by the ESRI, Central Bank of Ireland, and the major international economic institutions.

The Economic and Fiscal Outlook forecasts the debt/GDP ratio to drop below 100 percent by the end of 2015 in the context of the strengthened economic growth and improving fiscal position. This improvement in the ratio is expected to continue over the forecast horizon<sup>37</sup>.

Strong growth in 2015 is forecast to increase the employment level by 53,000 (2.8 percent) over 2014 levels. An average unemployment rate of 9.5 percent is projected for the year, and if present trends continue, the unemployment rate will likely move to 8.3 percent by the end of 2016<sup>38</sup>.

Over the second half of this decade, employment growth is expected to average around 1.8 percent per annum, with the result of having 2.1 million at work in 2018 (Table 1). Aggregate labour supply is meanwhile expected to respond positively, driven by a resumption in positive in-migration, together with a pick-up in participation rates<sup>39</sup>.

**Table 1 Irish Growth forecasts, 2014-2021**

Percentage change unless otherwise stated	2014	2015	2016	2017	2018	2019	2020	2021
Real GDP	5.2	6.2	4.3	3.5	3.2	3.1	3.0	2.9
Real GNP	6.9	5.5	3.9	3.2	2.7	2.7	2.7	2.6
Employment	1.8	2.8	2.4	2.0	1.9	1.8	1.7	1.6
Unemployment (rate)	11.3	9.5	8.3	7.7	7.2	6.8	6.5	6.2
General government balance (percent of GDP)	-4.1	-2.1	-1.2	-0.5	0.2	1.0	1.8	2.5
General government debt: GDP ratio	107.5	97.0	92.8	90.3	86.7	83.5	79.8	75.7

Source: Short-term economic outlook and Economic and Fiscal Outlook, Department of Finance, 2015

This Enterprise 2025 strategy sees the potential to achieve a 6 percent unemployment rate at a faster pace than that set out in the projections framed in the context of Budget 2016<sup>40</sup> (see Section B, Vision, strategic objectives and potential).

<sup>37</sup> Ibid

<sup>38</sup> Ibid

<sup>39</sup> Ibid

<sup>40</sup> Short-term economic outlook, Presentation to the Oireachtas Committee on Finance, Public Expenditure and Reform, Economics Division, Department of Finance, 6th October 2015



## Challenges and opportunities post-2014

While the short term economic outlook is promising, Ireland's recovery remains fragile - risks and uncertainties remain. Any turbulence in world events which leads to lower than expected growth will challenge the attainment of medium term fiscal targets, generate public expenditure pressures, and impact on the public debt.

Improvements in competitiveness and productivity have been key to ensuring the turnaround in the economy and the successful return to growth and employment in recent years. It is essential that these improvements are not lost so that a solid base for sustainable growth in employment and living standards over the medium term can be maintained.

Although the period of heightened austerity is now over, we need to ensure that future policies remain sensible and focused on supporting sustainable enterprise growth. In consolidating the public finance position, the Government has committed to minimising tax increases, and where possible easing the tax burden, in the interests of boosting enterprise development, consumer confidence and employment expansion. The fact remains that Ireland's public debt, while declining, remains high. It is vulnerable to weak economic growth, especially weak external demand.

Ireland must also contend with uncertainties surrounding the future course of the European Union and the euro area, which are central to Irish economic and social development. While a welcome development, the potential impact of the European Central Bank's Quantitative Easing (QE) programme - launched in March 2015 to counter the threat of deflation and persistent economic stagnation in the European economy by stimulating depressed aggregate demand - remains unclear, especially with near zero interest rates. The continued EU membership of the UK, a major trading and political partner for Ireland is also uncertain, with the UK government's commitment to renegotiate the terms of its EU membership and hold a referendum on continued membership by end-2017.

## Conclusion

It is timely now as we emerge from one of the most difficult periods in Ireland's economic history that we set out the strategic ambition for Ireland's future enterprise policy.

We need to ensure that we secure a new economy over the coming decade - one that is robust, resilient and based on sound policy choices. We need now to reconsider how we measure success - that we look beyond job numbers as the primary indicator - and that we put in place policies that are robust and flexible and that underpin *sustainable* growth over the coming decade in the context of intensified global competition and significant change.

## Enterprise policy – a broad agenda

### Introduction

In much of the literature and ongoing discourse in the EU and internationally, the term 'industrial' policy continues to be used. In Ireland, we have for over a decade used the term 'enterprise' policy to better reflect its current (and potentially future) policy mix to support enterprise investment, jobs and growth.

Enterprise policy is *any type of intervention* or government policy that *attempts to improve the business environment* or to alter the structure of economic activity toward sectors, *technologies* or *activities* that are expected to offer better prospects for economic growth or *societal welfare* than would occur in the absence of such intervention<sup>41</sup>.

This definition includes horizontal policies as well as more targeted approaches. It includes policies that aim to improve the business environment. It uses the term economic activity that encompasses sectors, technologies and value chain activities. This definition captures the essence of Ireland's current and future enterprise policy.

*Making it Happen – Growing Enterprise for Ireland* was developed by DJEI and Forfás in 2010 in the context of the global and national economic recession post 2007 and is the most recent comprehensive report on enterprise policy<sup>42</sup>. Ireland's policies based on export-led growth, enhancing framework conditions, coupled with selective sector specific policies and firm level interventions that aim to stimulate additionality and (increasingly) behavioural change, have served us well in terms of recovery post-recession.

Enterprise Policy 2025 reassesses our policy approaches in the context of global change and their implications on enterprise over the coming decade. It highlights our commitment across government to driving enterprise growth and job creation, acknowledging that enterprise policy is a broad agenda. We need also to remain abreast of the EU policy context.

Our longer term outlook aims to deliver a policy regime that:

- is robust and responsive to ongoing change and external influences over which we may have no control; and
- remains focused on those areas where we can make a difference to strengthen our resilience in the face of such change.

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41 In its paper *Beyond Industrial Policy – Emerging Issues and New Trends*, the OECD adapted a widely cited Pack and Saggi (2006) definition. Adapted sections are included in italics. We have replaced the term industrial with enterprise as being more reflective of the new economy

42 *Making it Happen: Growing Enterprise for Ireland, Forfás Recommendations to Government*, Forfás, 2010

## The European Union policy context

As a Member State of the EU, Ireland's enterprise policies are informed to a large extent by the EU. The current growth strategy, Europe 2020, and research and innovation strategy, Horizon 2020, are particularly relevant in this regard although they relate to a time frame that is shorter than for this enterprise policy statement. Nevertheless, many of the fundamentals will continue to remain relevant over the next number of years.

Europe 2020 (launched in 2010) took a ten year perspective to deliver sustainable growth that is:

- smart through more effective investments in education, research and innovation;
- sustainable through decisive movement towards a low-carbon economy; and
- inclusive with a strong emphasis on job creation and poverty reduction.

Under the ongoing mid-term review, Member States have been invited to debate the current strategy with a view to identifying the elements which have not been successful, areas that can be improved, and the main hurdles that remain<sup>43</sup>.

Within this context Horizon 2020<sup>44</sup> plays a pivotal role with the objective of stimulating coordinated research (and its commercialisation) aimed at addressing major societal and/or 'grand' challenges such as climate change, sustainable transport, and food safety. The contention is that a challenge-based approach will bring together resources and knowledge across different fields, technologies and disciplines. Horizon 2020 places a focus on innovation-related activities, such as piloting, demonstration, test-beds, and support for public procurement and market uptake – translating research into new products, process and services and ultimately into job creation.

The main tenets of the EU strategies remain valid from Ireland's perspective: investments in education, research and innovation will be crucial underpinnings of future growth, and environmental considerations are increasingly embedded in not only what business does, but *how* it does it.

The EU Competitiveness Council considers that there needs to be a more coherent and holistic approach between industrial and other intertwining EU policies such as research and innovation, competition, trade, energy, and environmental and climate policies – which should all contribute to enhancing EU and national competitiveness<sup>45</sup>. The *think small first principle* remains an overriding consideration.

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43 The Commission proposed five headline targets for the EU namely employment, R&D, Climate change and energy, education and poverty and social exclusion – each of which are translated into national targets

44 Horizon 2020 is the financial initiative aimed at securing Europe's global competitiveness and job creation through investment in (coordinated) research aimed at addressing societal challenges

45 The Competitiveness and European Councils have been advocates for achieving greater coherence between the EU level and Member State level as a broad objective of the new EU Industrial Policy. This also implies a strengthening of the decision-making capabilities of the EU's Competitiveness Council and preparatory group, the Council's High level Group on Competitiveness

There is a broad range of policies, strategies, directives and regulations at the EU level that are important to Ireland's enterprise policy development<sup>46</sup>. Other aspects of relevance include the continuing focus on developing/strengthening the EU as a single market including the EU Internal Market, the Services Directive, and the Digital Single Market.

## The wider policy environment

Enterprise policy involves a broad spectrum of related and interconnected horizontal policies aimed at 'creating' the environment that is conducive to business; it cannot and should not be seen in isolation from other key and complementary policies.

The recent preliminary review of the APJ undertaken by the OECD describes the implementation of the APJ as an important innovation in Irish governance. The OECD contends that implementation could benefit from even deeper centre-of-Government-led horizontal policy coordination between the APJ itself and key sector-based strategies so that opportunities for policy synergies are fully exploited (e.g. on innovation, R&D support, support for entrepreneurs/start-ups and higher education<sup>47</sup>). The development of Enterprise Policy 2025 has involved close engagement with other Government Departments in order to realise a greater degree of coordination in policy formulation than has been realised in the past.

Although not exhaustive, the following sets out a range of complementary policies that are crucial to realising future job creation and growth that will be primarily driven by enterprises. In some instances there are (not surprisingly) potentially divergent policy objectives. Nevertheless, there is also sufficient basis and potential for more aligned approaches to achieving primary policy objectives.

**Science, technology and innovation policy** Innovation plays a critical role in creating competitive advantage, enhancing productivity and ultimately increasing profitability for enterprises and has been a core plank of Enterprise Policy for the past number of decades. Innovation is a broad and pervasive concept. Innovation includes research and technological development, new product development, new processes, services, business models, revenue models and organisational structures as well as governance and social innovation. From an enterprise policy perspective, Ireland needs to ensure that investment in RD&I is leveraged to stimulate economic growth. Competing priorities across Government Departments can and do exist<sup>48</sup>. Nevertheless, we contend that there is significant potential to harness the capabilities of enterprise to partner in addressing societal challenges and wider national policy objectives.

**Education and skills policies** The quality of our workforce is essential for all enterprises operating across the economy. Today, the competition for talent is global and intense. Education is broad ranging in its remit, involving broadly based impartation of knowledge and

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46 For example, State Aid Guidelines, the upcoming review of the Small Business Act, Trade negotiations, Horizon 2020 (RD&I), Smart Specialisation etc.

47 Ireland's Action Plan for Jobs: A Preliminary Review, OECD, April 2014, p.29

48 For example the Department of Education and Skills, while sharing DJEI's enterprise goals, also has a remit which includes blue skies research and research for knowledge which may not have immediate commercial application. Teagasc, the Health Research Board and the Environmental Protection Agency, have remits that include research for policy, and research aimed at solving societal challenges such as climate change, and public health

learning, skilling/training, further education, life-long learning etc., meeting the needs of individuals from a young age, and including those in employment and the unemployed. Enterprises are seeking individuals with higher levels of education in core domains (and in particular science, technology, engineering and maths - STEM) as well as higher order skills (e.g. problem solving, design thinking, entrepreneurial skills etc.). As the future way of working evolves, this too will have implications for education and continuous learning. There can be genuine challenges in aligning education philosophy and meeting the fast changing needs of enterprise, and in facilitating a responsive system given the timelines involved in course design and implementation<sup>49</sup>.

**Regional development policies** There is a strong interdependence between place-making (the planning, development and creation of an attractive environment) and enterprise development. Although regional policy is driven by the DECLG, there is a reliance on a number of other government departments and semi-state bodies to align and implement specific investments<sup>50</sup>. Very often the success of a region is interpreted (only) in terms of its attractiveness for FDI rather than seeing the broader potential. Not all regions can or should be the same, as they differ in terms of potential, critical mass, nature of sectors, available skills and innovative capacity. In Ireland's context, as a small economy, with constrained exchequer resources, place-making policies will require both top down and bottom up approaches to realise the potential of individual regions within a national context. Place-making policies, sectoral eco-system development, clustering, and smart specialisation policies are relevant in this regard. A new National Planning Framework (successor to the National Spatial Strategy) is currently being developed together with Regional Spatial and Economic Strategies (RSES), and DJEI is finalising Regional Action Plans.

**Trade policies** As a small open economy, our openness to trade and investment, and the relationships that we establish with existing and potential trade partners are critical to enterprise growth and economic performance. Trade and investment activity encompasses the export and import of goods and services, and foreign direct investment (inward and outward). All of these activities are governed to some extent by international trade agreements which aim for greater trade liberalisation, regulatory convergence and greater economic integration. At the same time, a variety of barriers exist that hinder international trade and investment between countries. Although the EU is the competent authority involved in trade negotiations, it is crucial that Ireland remains abreast of developments, of potential implications for sectors of interest, and is poised to both influence and take advantage of new and/or changed trade agreements<sup>51</sup>. The Review of Trade, Tourism and Investment Strategy 2010-2015 and its predecessor<sup>52</sup> sets out the Government's overarching approach to Ireland's trade and investment promotion activities, and this strategy is due for renewal.

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49 There has been ongoing discussion and collaboration to ensure that the next National Skills Strategy is informed by this longer term enterprise policy

50 Including DJEI, DAFF, DTTAS, DAHG, DES, DSP, NewEra, Irish Water etc.

51 The negotiation of bilateral, plurilateral and multilateral (WTO) trade agreements is an exclusive EU Commission competence under the TFEU (Article 207) which it undertakes on behalf of Member States. Only the EU, and not individual Member States can legislate on trade matters and conclude international trade agreements

52 Trading and Investing in the Smart Economy: A Strategy and Action Plan for Irish Trade, Tourism and Investment to 2015, DJEI, 2010

**Environmental policies** Ireland is required to meet environmental targets and/or regulatory standards set by the EU (e.g. in energy efficiency, reducing carbon emissions or acidification precursors, etc.). As set out in the section on global drivers of change, it is clear that environmental considerations have significant implications (and also present opportunities) for enterprises. Nevertheless, there can be tensions related to increased short-to medium-term costs associated with achieving environmental targets and/or meeting regulatory standards that impact on Ireland's relative cost competitiveness. At the same time, environmental regulations can drive innovation and create employment opportunities in the cleantech sector<sup>53</sup>.

Companies can reduce their own costs and increase efficiencies by undertaking environmental-related investments, and can position themselves in the market as having a clean, green image. Competing priorities also exist in the areas of agriculture/food production and biomass. For example, Ireland has committed to increasing agri-food exports by 85 percent via its Food Wise 2025 Strategy, but also has to curb emissions from the agricultural sector.

It is important that Ireland's enterprise policy over the period to 2025 and beyond demonstrates a responsible approach to environmentally sustainable growth and that there is a national commitment to minimising the potential impact on competitiveness. This will include taking policy steps that will realise medium to longer term benefits that outweigh risk of temporary losses in competitiveness in the shorter term.

**Regulation policies** Effective economic regulation is central to economic competitiveness. A robust regulatory environment generates security and stability for business, while also protecting the public good. Much of Ireland's regulatory regime is driven by the EU, for example in terms of employment law, health and safety, environmental regulations. Regulations are a binding legislative act which must be applied in its entirety across the EU. Ensuring that Ireland has a regulatory environment that is fit for purpose over the coming decade is crucial. This will require effective regulatory impact assessments, embedding think small first at the design/implementation stage of the regulatory process, and removing any (potential) barriers to innovation in what has become an extremely fast paced and increasingly complex environment. Ensuring minimisation of administrative bureaucracy, consistency, transparency and efficient customer services are crucial to delivering the certainty that can often influence an enterprise's investment decision.

**A broad range of other policies** that are important for enterprise policy include tax and fiscal policies, investment in productive infrastructures, labour market policies, and policies that facilitate and support the emergence of innovative start-ups, for companies growing to scale and for the attraction of foreign direct investment (FDI). Competition policy should continue to focus on ensuring that there is a level playing field in which enterprises can operate, thereby assisting cost competitiveness, helping to improve choice and quality, encouraging innovation and supporting economic growth.

## The inter-connectedness of policies ... the challenges

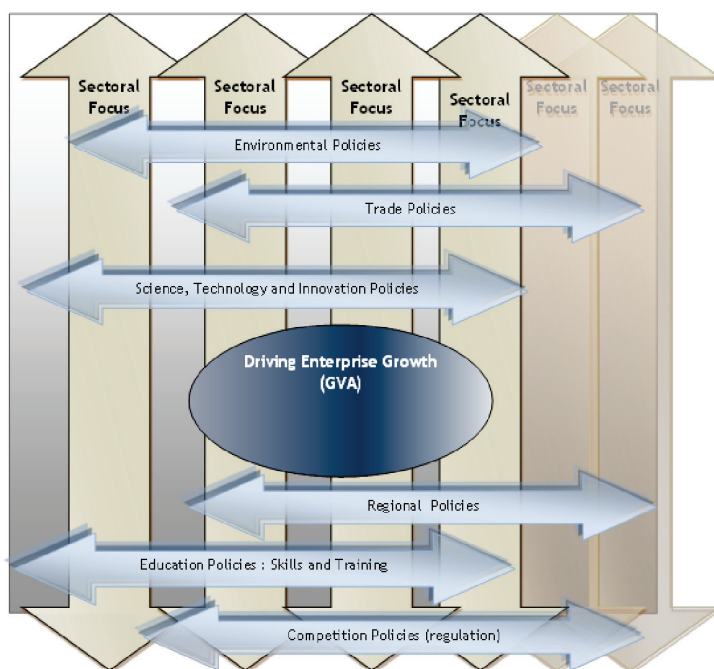
DJEI (through its offices and agencies) provides a range of services and supports to enterprises including the Companies Registration Office, NSAI, Patents Office, NERA and others, as well as through the development agencies Enterprise Ireland, IDA Ireland and SFI. DJEI also has a

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<sup>53</sup> Such as energy efficiency and renewables, waste, water and environmental consultancy services

coordination role for the LEOs (via Enterprise Ireland) and has direct responsibility for the development of key aspects such as competition, labour market, trade and science, technology and innovation policies.

Although DJEI is the principal governmental advocate for the enterprise sector, many other government departments have a role to play in delivering on complementary actions to enhance innovation, productivity and cost competitiveness and to support the development of a robust enterprise mix.



This analysis serves to reinforce the importance of the inter-connectedness of policies - acknowledging that in some instances, the objectives of the policies may sometimes be (or appear to be) in conflict with the needs of enterprise. The tensions arising are particularly pertinent when operating in an environment of constrained resources. Nevertheless, an enhanced understanding of where and how the policy objectives overlap and converge can lead to more coordinated policy development in the first instance and in more effective implementation.

## New thinking in enterprise policy

### Systems approach and a different role for government

Over time, the rationale for enterprise policy interventions has moved from a traditional approach based largely on product market interventions (production subsidies, State ownership, tariff protection), through to market failure-correcting taxes and subsidies operating mainly on factor markets (R&D incentives, training subsidies, help with access to finance).

Today, there is an increasing focus on interventions that help build systems, create networks, address coordination failures, develop institutions and align strategic priorities<sup>54</sup>. This has been termed a *systems approach* to enterprise policy. Evolving thinking in enterprise policy sees the role for the State as a facilitator, coordinator, promoter and informer, *in addition* to investor. The goal of this systems approach is to develop ways for government and enterprise to work together to set strategic priorities, deal with coordination problems, allow for experimentation, avoid capture by vested interests and improve innovation and productivity. An essential

<sup>54</sup> Beyond Industrial Policy: Emerging Issues and New Trends, Warwick, K. I, OECD STI Policy Papers, No. 2, 2013; Enterprise policy evaluation: Is there a 'new' way of doing it?, Lenihan, H. in Evaluation and Program Planning, 34 (4), 323-332, 2011



government role is to engage in dialogue with business to ensure the most efficient allocation of resources for enterprise support. Where there are multiple aspects to the challenge<sup>55</sup>, enterprise policy needs to mobilise industry or agencies of the State that already are set, or have the potential, to jointly explore and experiment with business in order to figure out how to make things work and to test and build ideas that have scale.

International examples of this new systems approach are not necessarily new to Ireland's enterprise policy landscape. Nevertheless, there is certainly potential to place greater emphasis on policy initiatives that connect and leverage the entire system in a way that will deliver greater economic impact than might otherwise be realised. Areas of interest include:

- facilitating **clustering activities** of scale and international visibility<sup>56</sup> - involving a genuine interaction amongst enterprises and between enterprises and higher education and research institutes as distinct from co-location;
- using **public procurement** as a tool for fostering innovation as a demand side initiative. Four levels of public procurement can be distinguished: incorporating innovation criteria in tender specifications; creating a signalling effect as a lead user to influence the diffusion of innovation; pre-commercial strategic procurement through SBIR type initiatives; and the commercialisation of products to meet a defined (public) user need; and
- a **Grand Challenge approach** as envisaged in Horizon 2020, where government can play a role in creating a market for technology to address a time-bound need to meet a societal challenge. Through investments in RD&I and by engaging in collaborative approaches, enterprise can work with the Government to deliver innovative products, processes and services to address national grand challenges, such as population ageing, health, smart cities and the environment.

### Smart specialisation and the new enterprise policy agenda

Smart specialisation is about prioritising and channelling resources towards those RD&I investments that have the potentially highest impact on the national and/or regional economy.

At the heart of smart specialisation is the concept of entrepreneurial discovery and entry. The process of smart specialisation aims ultimately to realise a structural evolution of an economy as distinct from a 'simple' technological innovation. Structural evolution involves, for example, the transition and/or modernisation of an often traditional sector through adapting a general purpose technology to produce a significant impact on the efficiency and quality of the sector, or diversification that involves potential synergies which are likely to materialise between an existing activity and a new one. The main goals of smart specialisation involve facilitating the emergence and early growth of new activities which are potentially rich in innovation and spill overs; diversifying the national and/or regional systems; and generating critical mass, critical networks and critical clusters.

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<sup>55</sup> NESO cites the examples of developing an Irish waste and agricultural anaerobic digestion industry. Aspects to the challenge include gate charges for waste, energy tariffs, planning, needs of end users in heating and transport, infrastructure etc. See also EPA policy discussion paper 2005 on this topic <http://www.dcenr.gov.ie/NR/rdonlyres/287C17F6-13D2-48B9-882C-2060512A573E/0/EPAappendix.pdf>

<sup>56</sup> The Cluster Initiative Greenbook, Sölvell, Ö., Lindqvist, G. and Ketels, C., (1st Ed.), Stockholm, Ivory Tower, 2003



Ireland's Research Prioritisation Exercise sets out the primary areas of focus that inform Ireland's ongoing investments in building RD&I capacity and capability, focused on areas that are of relevance to Ireland's current and future enterprise potential.

#### **The experimental nature of policy development and the need for evaluation**

The role of evaluations becomes even more important in this increasingly complex policy environment that involves a degree of experimental development. It is a reality that not all investments in new activities will pay off. Nevertheless effective evaluations can ensure that the support of a particular line of capabilities formation will not be discontinued too early nor continued so long that subsidies are wasted on non-viable projects. Recent evaluations undertaken by DJEI have demonstrated an advanced understanding of the potential greater impact that can be achieved by taking a systems approach to bundling and/or sequencing policy interventions at the level of the enterprise. Our enterprise policies and the policy system will continue to be enhanced and informed by evidence based evaluations involving a continuous feed-back loop through from ex-ante to ex-post evaluations.

### **Whole of Government – DJEI as the principal advocate**

In conclusion, the Government's focus on sustainable job creation and growth does not fall solely within the remit of DJEI. A whole of government commitment is required, building on the success of the APJ process. The APJ was stimulated in response to a deep crisis, and it is important that the progress made is not diminished as we return to a more stable economic environment.

We need now to build on Ireland's track record and on the cross government focus on implementation stimulated through the Action Plan for Jobs process to deeply embed a systems approach to developing and implementing enterprise policy over the next decade. We need to further advance our understanding of sector specific needs in a fast paced global environment so that we develop cohesive effective horizontal and selective enterprise policies that are implemented by a truly agile, responsive government.

As the principal advocate for enterprise, DJEI can play an even stronger role over the next decade in working closely with business, and in driving the enterprise development agenda within the broader complex public policy context.

## Global trends and implications for policy

### Introduction

It is without question that over the period to 2025 we can expect considerable change: in the environment that businesses operate; how businesses themselves will operate; and in the products and services they generate.

It has been extremely challenging to consider the longer term perspective when faced with the crisis that we experienced since 2007. It is both timely and necessary that as a small open economy dependent on global markets, we consider the broader global context in which our enterprises are likely to be competing over the next decade and beyond.

### Global drivers of change

The main global drivers of change work separately and in combination to produce new challenges and opportunities in economy and society. Many of these are well known, although their implications for business have become more evident in recent years. The key drivers include:

- **Globalisation:** Globalisation is now a given but nevertheless remains an important factor in driving change. We have seen how the contagion effect and interconnectedness of global capital relationships turned apparently domestic banking crises into a global financial crisis. Emerging markets are asserting themselves in the global economy as markets in their own right, as sources of innovation and of global capital flows and there is progressive spatial disaggregation of value chains within ever more complex corporate global structures.
- **Demographics:** Demographic change manifests in different ways in different parts of the world, including evidence of a growing divide between countries with youthful and aging populations, global skills shortages, expanded middle classes in developing economies, and challenges facing the more mature workforces in terms of reskilling around new technologies and ways of working.
- **Global economic uncertainty/public debt:** In the aftermath of the recent global financial crisis, austere fiscal policies and making choices about capital spending continue to affect the capacity of many countries to respond to major social, economic and environmental challenges, with knock-on consequences for businesses. Some countries have fared better than others and it remains to be seen how this may translate into new global economic influences and/or a rebalancing of global economic power<sup>57</sup>.
- **Geo-political volatility:** Ostensibly local issues can have much broader ramifications extending into the economic relationships between nation states, and on a wider geographic scale in the form of economic sanctions. Along with the potential for tragic loss of human life, geo-political conflict also has the potential to disrupt economic

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<sup>57</sup> <http://www.globalissues.org/article/768/global-financial-crisis#Asiaandthefinancialcrisis>

development and established economic relationships and is an ever-present threat in the world.

- **Technological advances:** Such advances have a unique role in their potential to transform life, business and the global economy<sup>58</sup>. Wave after wave of technological advances create novel opportunities for the creation of new products and services, make others obsolete, and have enabled the transformation of business models, organisational structures, manufacturing processes and value chains, and have brought about a more interconnected world.
- **Individual empowerment:** Largely rooted in mass adoption of new technological advances, better health, and wider provision and adoption of education globally, the so-called 'rise of the individual' is recognised as a significant driver of change in the global economy and society<sup>59</sup>. The empowered and tech savvy individual is manifest in the growing middle class consumption base globally, rising expectations in emerging economies, and transformation of the workplace.
- **Climate change:** These forces continue to be one of the most significant and challenging issues facing the world. Climate will test the resilience of natural and built systems globally, with food production and ecosystems being particularly vulnerable. Environmental-related rules and regulations can be a driver of innovation in the longer term, but they also place significant cost and administrative burdens on individual firms, particularly those in manufacturing<sup>60</sup>. Increasingly, the more informed consumer is also making purchasing decisions on the basis of environmental considerations.
- **Water, energy, food nexus:** The demand for water, energy and food resources (the WEF nexus) is anticipated to increase at a rapid rate over coming decades, with the consequences of climate change factors also expected to add to the problem<sup>61</sup>. There are challenges that require consideration of all three elements when assessing consequences and planning for investments, policies and actions<sup>62</sup>.

## Emerging trends

The global drivers above influence each other and combine to initiate continuous waves of change in our economy and society generally. We focus on eight emerging global trends followed by their implications for policy:

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58 Disruptive technologies: Advances that will transform life, business and the global economy, McKinsey & Co, 2013

59 Future State 2030: The global megatrends shaping governments, KPMG, 2014

60 Global Manufacturing Competitiveness Index, Deloitte, 2010; Making it in Ireland: Manufacturing 2020, Forfás, 2013

61 The Water–Energy–Food Security Nexus: Towards a practical planning and decision-support framework for landscape investment and risk management, International Institute for Sustainable Development, February 2013

62 The World Economic Forum brought the issue of risk correlation between the three WEF elements to full international political attention at the Davos Summit through their Global Risks 2011 report

- Technology disruptors;
- Global value networks (GVNs);
- Shifting consumption patterns;
- Redefinition of the workplace;
- Workforce transitioning;
- Shifting global economic power structures;
- Urbanisation; and
- Increasing demand for resources.

### Technology disruptors

There is probably no area more dynamic or influential as technology. It is also unpredictable, and while we may be aware now of emergent technologies that have the potential to transform and disrupt established norms within the timeframe of EP2025, more will emerge that are not currently known about. Twelve emerging/developing technologies have been identified that are destined to drive substantial economic impact and disruption by 2025 (Table 2).

**Table 2** Technology disruptors

Mobile internet	Next generation genomics
Automation of knowledge work	Energy storage
Internet of Things	3D printing
Cloud technology	Advanced materials
Advanced robotics	Advanced oil and gas discovery
Autonomous/near autonomous vehicles	Renewable energy

Source: Disruptive technologies: Advances that will transform life, business and the global economy, McKinsey & Co, 2013 – See Appendix II for a more detailed table containing an overview of impacts of these disruptive technologies

While many of these technologies are already known about to some extent, it is their wider adoption that will have the disruptive impact over coming years. What is obvious across many of the technologies listed is that digitisation continues apace, and is having an impact across all sectors of activity without exception.

The EU has identified the successful deployment of Key Enabling Technologies (KETs)<sup>63</sup> by enterprise as a key factor in strengthening Europe's competitiveness. KETs are embedded at the

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<sup>63</sup> Including nanotechnologies; photonics; advanced materials; biotechnology; and advanced manufacturing and processing

core of most advanced products. Ireland's National Research Prioritisation Exercise<sup>64</sup> is aligned with KETs through the 14 Priority Areas<sup>65</sup>.

### Global value networks

The global value network (GVN) captures the progressive disaggregation and increased complexity of more traditional value chains. It is also a 'whole system' view that takes into account the broader enterprise ecosystem from which firms leverage value, such as research institutions, infrastructure, universities, regulatory agencies, venture capital, government and policy environment including taxation etc.<sup>66</sup>. The dynamic nature of GVNs does not always result in fragmentation and dispersion of activities. For example the phenomena of 're-shoring' and 'near-shoring' of activities has taken place in the context of the need to be more responsive to local customer needs, or the need for certain activities to be more closely coupled<sup>67</sup>. Considerations about environmental sustainability will feature more strongly in strategic footprint configuration over coming years.

### Shifting consumption patterns

Consumption patterns globally are shifting in a number of respects. Demographic changes and shifting economic power structures have given rise to rapid growth of the middle classes in emerging economies<sup>68</sup>. The expansion of e-commerce and e-tailing<sup>69</sup> globally has brought the global marketplace to any individual consumer with an internet connection, however remote. The growth of e-tailing poses issues for town and city development and planning where the need for physical storefronts give way to increased demand for warehousing and other logistics.

Shifting consumer patterns and behaviours are impacting the world of manufacturing particularly in more developed economies, as consumer preferences become more diverse and individuals seek customised solutions specific to their needs<sup>70</sup>. Consumers no longer have a passive relationship with the manufacturer in the consumption of the product and play a highly central role in product and service innovation<sup>71</sup>.

Growing awareness about climate change and the environment has also influenced consumer preferences and behaviours. Increasingly, the more informed consumer is making purchasing

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64 The Report of the Research Prioritisation Steering Group, DJEI, Forfás, 2011 also represents Ireland's Smart Specialisation Strategy for Research and Innovation

65 Along with underpinning science and technology platforms which include, inter alia, nanotechnology, microelectronics, advanced materials, photonics and biotechnology

66 Configuring Global Value Networks within Industrial Ecosystems, Srari, J.S., Christodoulou, P. and T. Harrington, in Capturing Value from Global Networks: strategic approaches to configuring international production, supply and service operations, Srari & Christodoulou, IFM, University of Cambridge, 2014

67 Ibid

68 The middle class will account for 52 percent of global population in 2020, while 65 percent of these will come from Africa, China and India. Throwing Light on the Future: Mega Trends that will Shape the World, Sarwant Singh, Frost & Sullivan, 2011

69 Defined as consumer facing e-commerce transactions (on-line shopping) – see China's e-tail revolution: online shopping as a catalyst for growth, McKinsey Global Institute, March 2013

70 See Making it in Ireland: Manufacturing 2020, Forfás, 2013

71 Exploring the Financial Consequences of the Servitization of Manufacturing, Neely, A.D. 2008

decisions on the basis of considerations such as air-miles, embedded energy, recyclability, waste and packaging materials.

### Redefinition of the workplace

Despite the radical changes that have occurred in most people's personal lives due to technological advances the workplace itself has been remarkably static in relative terms<sup>72</sup>. However, powerful global forces in combination are initiating change in the way people will work over coming decades, including: enabling technologies, shifts in global economic power, resource scarcity, demographic shifts and the rise of individualism. In broad terms, workplaces of the future will be less centralised, more mobile and more flexible than before, including increased prevalence of home working and teleworking, characteristics more often associated with the start-up and freelance economy<sup>73</sup>. The design of workplaces has become more important. Some have referred to the 'death of the office' as we know it<sup>74</sup>.

Increasingly, employees' priorities and preferences are dictating what the future workplace will look like, particularly as technology is enabling a variety of flexible working arrangements and the war for talent intensifies<sup>75</sup>. In the current period of high unemployment and challenging economic conditions the phenomenon of the 'zero hours contract' may be more widely deployed. While this allows a high degree of flexibility it may be considered exploitative for individuals seeking regular employment and associated entitlements, predictability and job security<sup>76</sup>.

Advances in technology<sup>77</sup> are continuing to drive further automation of tasks in more knowledge intensive areas, opening up possibilities for considerable change in how knowledge work is organised and performed, with some types of jobs becoming fully automated.

### Workforce transitioning

While Ireland is somewhat out of kilter with its European neighbours<sup>78</sup> and has a younger age profile, CSO projections show that demographic ageing will be a strong feature of Ireland's population change over the coming years. Overall, older age dependency (the proportion of over 65s relative to persons of working age 15-64) will increase from 17.3 percent in 2011 to

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72 A revolution is happening in offices everywhere, Groth, A. and M. Nisen, in The Future of the Workplace, Business Insider, Feb 7th, 2013

73 Ibid

74 Ibid

75 Tracking global trends: how six key developments are shaping the business world; Ernst & Young, 2011

76 Zero hours contracts: what are they?, Inman, Phillip, <http://www.theguardian.com/money/2013/jul/30/zero-hours-contracts-explained>

77 Including artificial intelligence, machine learning, advanced robotics, natural user interfaces (e.g. voice recognition) and sophisticated analytics, see Disruptive technologies: Advances that will transform life, business and the global economy, McKinsey & Co, 2013

78 Although most advanced in Europe and North America, population ageing is occurring, or will soon begin, in all the major areas of the world. Globally, the share of older people (aged 60 years or older) increased from 9 per cent in 1994 to 12 per cent in 2014, and is expected to reach 21 per cent by 2050, Concise Report on the World Population Situation in 2014, Department of Economic and Social Affairs Population Division, United Nations, New York, 2014

between 25.5 percent and 27.8 percent in 2026. In 2011, the older 50 years+ cohort made up 23.4 percent of the labour force and is projected to increase to 30.3 percent by 2026<sup>79</sup>.

There are significant generational differences within the labour force globally, with the so-called 'millennial' tech savvy generation carrying very different norms and expectations about work and the workplace from their older colleagues. 'Gen Y' will form 75 percent of the global workforce by 2025 and only 11 percent of them define having a lot of money as a definition of success<sup>80</sup>. Differential rates of economic growth, technology adoption and demographic ageing are fuelling a decline in the availability of skilled workers globally. The global 'war for talent' is growing increasingly acute.

### Shifting economic power structures

Across many different indicators, including demographics, FDI flows, urbanisation, economic growth etc., emerging economies are asserting themselves globally and have attained greater power to influence world economic policy<sup>81</sup>.

It is anticipated that over coming years, 70 percent of world economic growth will emanate from emerging markets, with China and India accounting for 40 percent of that growth<sup>82</sup>. Already, developing economies have overtaken developed economies in terms of global FDI inflows and they are increasingly a source of FDI<sup>83</sup>. In 2014 the value of cross-border M&A purchases increased by 19 percent, largely owing to increased acquisitions by transnational corporations (TNCs) from developing and transition economies<sup>84</sup>.

Emerging markets are increasingly a source of disruptive innovation often driven by the need to address customers with limited means<sup>85</sup>. Because of their relatively stronger position, banking sectors and institutions of emerging markets – particularly those of China, India and Brazil are expected to increase their presence on the global scene in coming years<sup>86</sup>.

Overall, the interconnectedness of the global economy continues to increase with growing international trade and capital flows<sup>87</sup>. Trade liberalisation is an ongoing process<sup>88</sup>. A potential

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79 A scenario of more pronounced negative net migration would accentuate this trend Population and Labour Force Projections 2016-2046, Central Statistics Office, April 2013

80 Source: Brian Solis' Future of Business, 2013 cited in 99 Amazing Facts on the Future of Business, SAP, <http://www.forbes.com/sites/sap/2013/10/08/99-amazing-facts-on-the-future-of-business/>

81 For example, since 2010, emerging economies gained a greater voice through an increased share in voting rights in the IMF with China becoming the 3rd biggest IMF member; Tracking global trends: how six key developments are shaping the business world; Ernst & Young, 2011

82 Ibid

83 Global Investment Trends Monitor, No. 15, UNCTAD, 2014

84 Global Investment Trends Monitor, No. 18, UNCTAD, 2015

85 Tracking global trends: how six key developments are shaping the business world; Ernst & Young, 2011

86 Ibid

87 Future State 2030: The global megatrends shaping governments, KPMG, 2014

88 Including, for example negotiations between the US and the EU on a transatlantic trade and investment partnership (TTIP) or the potential emergence of 'ASEAN+6' an integrated market of 16 countries in the Asia-Pacific region 'Talks on ASEAN+6 trade bloc to kick off in May', L.Yulisman, The Jakarta Post, Jakarta Business, 3/1/13

downside is the challenge posed by greater connection to risks beyond national boundaries. The need for increased levels of cooperation is a key policy imperative internationally.

### Urbanisation

Urbanisation of the global population is continuing apace to the extent that 60 percent of the world's population will live in cities by 2030, up from 50 percent in 2013<sup>89</sup>. Megacities, those with a population of 10 million and over, will increase from 20 today to 37 in 2025<sup>90</sup>. Most urban growth will occur in developing countries. The rapid growth of cities presents challenges for policy makers around the globe to manage that growth sustainably and ensure adequate access to housing, water and energy for citizens.

Cities are major sources and destinations for investment, talent, knowledge and innovation. Increasingly, the locus of competition for FDI is between global cities rather than countries<sup>91</sup>. The phenomenon of the 'tech hub' has become well established and cities internationally are vying for the attention of fast growing young firms, entrepreneurs and talent. And it is not just about the fast growing young firms, since well-established MNCs are drawn to technology hot-spots to access talent and the ideas emerging from innovative start-ups.

It is also the case that size alone does not necessarily determine a city's growth potential<sup>92</sup>. Many cities are seeking to derive place competitiveness benefits by demonstrating smart characteristics. Over 40 global cities will be smart cities in 2020<sup>93</sup>. While the objectives are to achieve environmental, economic and social sustainability through systematic integration of ICT in their planning, design, operations and management for the benefit of the citizen, smart cities are considered to boost the location's attractiveness for people and businesses, especially those who want to innovate.

### Increasing demand for resources

Global demand for food, water, and energy is increasing with global population and economic growth. In relation to energy, surging demand, international climate change agreements, energy prices, energy security concerns and scarcity of natural resources will see governments and companies seeking to further diversify their energy portfolio mix and continue to invest in clean energy innovation, deployment and adoption<sup>94</sup>.

The prospect of increasingly scarce resources has the potential to alter global power relationships as well as generate geo-political exploitation and conflict and requires a joined up global response as well as responsible actions by individual nation states.

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89 Future State 2030: The global megatrends shaping governments, KPMG, 2014

90 Ibid

91 Out of 11,952 destination cities for FDI projects globally, 20 of them accounted for 18 percent of FDI investment projects globally between 2003 and 2012. Cities are also a major source of FDI, with 20 out of a total of 6,528 source cities accounting for nearly 30 percent of FDI projects globally. Based on FDI Markets data – DKM analysis for Forfás, 2014

92 Hot spots: Benchmarking global city competitiveness, Economist Intelligence Unit, 2012

93 Throwing Light on the Future: Mega Trends that will Shape the World, Sarwant Singh, Frost & Sullivan, 2011

94 Tracking global trends: how six key developments are shaping the business world; Ernst & Young, 2011



Companies large and small are responding and many now see it as a commercial opportunity to build cleantech into their growth strategies and 'greening' existing products and services. Some are moving into growth areas that are outside their traditional lines of business (e.g. Google and Cisco have both entered the home energy management space)<sup>95</sup>.

Water is one of the most important resources in the operations of many manufacturing plants, in particular for pharmaceutical and food companies. Water availability, and at a competitive price, is one aspect; the quality of the water supply is crucial – particularly so for companies involved in pharmaceuticals and food.

## Implications for enterprise policy

This snapshot in time is the lens we have used to consider whether Ireland's current enterprise and related policies remain fit for purpose in a changing world, and whether different approaches and/or emphases are necessary.

More detail is provided in the relevant sections of the report but at an overarching level, these emerging trends globally have implications for how we approach:

### *Technological disruption and digitisation*

- The potentially disruptive nature of technologies that is facilitating: the emergence of new areas for growth; a 'refreshing' of more mature sectors; the evolution of new ways of doing business throughout the world, via global value networks and what that means for our FDI proposition, for the potential for Irish owned enterprises to engage effectively, and in the context of the rise in global trade in services; new ways of working (including remote working); 'smart' city developments; and automation of knowledge work (that presents both opportunity and challenges). The advances and pace of change within the technology world will have a transformative impact on every aspect of enterprise and society over the coming decade and we need to ensure that our enterprise (and innovation) policies are fit for purpose. A policy priority needs also to be placed on ensuring investment in future proofed high speed broadband infrastructures and on data security and privacy.

### *The talent agenda*

- The war for talent and future ways of working has implications for Ireland's education system; for leadership and management capabilities; for continuous re-skilling and upskilling to meet the pace of change; for the development of higher order skills; for addressing the immediate challenges facing the more mature workforce and of the demands of the 'm savvy' new entrants to the workplace; for new flexible modes of employment; for the attractiveness of Ireland for mobile talent (to retain, attract and attract back talent).

### *Trade and investment policies*

- Ireland's approach to Trade negotiations, policies and strategies as well as policies relating to investments (both inward and outwards) in an extremely uncertain

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95 Tracking global trends: how six key developments are shaping the business world; Ernst & Young, 2011

environment requires a strategic and coordinated approach; strengthening our approach to connecting our understanding of enterprise potential with geographic market opportunities in an era of constrained resources; considerations relating to developing our value proposition for investment and strengthening our business environment.

*Place-making in a more competitive international context*

- The interconnectedness between place-making and meeting the needs of enterprise and the implications for our regional and urban policies in the context of intensified competition between cities for investment; the need to consider how Ireland (and its regions) differentiates its proposition; what steps we can take for smart city development; and the implications arising for town and city development in the context of the rise of e-tailing.

*Sustainability - a pervasive agenda*

- The green agenda and its pervasive implications in terms of: meeting EU targets; challenges and opportunities in balancing cost competitiveness and investments in alternative sources of energy; how Ireland manages its own WEF challenges and considerations of the role it might play in the context of constrained global resources; and the enterprise opportunities and potential for enhanced approaches to managing environmental waste and carbon footprint.

*An inter-connected world*

- How Ireland positions itself within an increasingly inter-connected world across a number of dimensions including trade, investment, global business models, global value networks (GVNs), collaborations, infrastructures etc., taking into account the inherent risks as well as opportunities.

The one certainty when reviewing global trends is that change is constant and that the pace of change is unprecedented. This requires that we put in place a more systematic approach to horizon scanning and develop a strengthened anticipatory, responsive and robust policy system that will facilitate sustainable growth over the period to 2025.



## A review of Ireland's enterprise performance

### Background

The analysis undertaken to inform this strategy sought to determine how the enterprise base has evolved over the past ten to twenty years<sup>96</sup>. In many cases the evidence points to the fact that Ireland's enterprise policy based on a model of export-led growth is broadly well placed - we are by and large doing the right things. The review of enterprise performance, contextualised within a period of volatility<sup>97</sup>, has served to identify aspects that warrant an increased policy emphasis over the next decade.

The analysis was based on an economy wide assessment - however data has its limitations<sup>98</sup>. For example, employment data can mask the fact that enterprises themselves have evolved in terms of the nature and range of activities that they undertake in order to remain internationally competitive. The analysis considers whole of economy enterprise and labour market activity and draws primarily from CSO sources and complemented with data from DJEI AES and ABSEI (specific to agency-supported enterprises).

We set out the key findings, highlight the challenges that remain and the policy implications.

### Key findings - enterprise performance

*There are tentative signs of recovery*<sup>99</sup>...

- Overall, employment stands at 1,958,700 (Q2 2015) – higher than a decade ago.
- Employment has increased by 57,100 in the year to Q2 2015, and has increased by 126,000 since the implementation of the APJ process in 2012 across all sectors of the economy and across all regions.
- The unemployment rate has fallen and now stands at 9.8 percent (May 2015) down from its peak of 15.1 percent in December 2011<sup>100</sup>.
- There were approximately 185,500 active enterprises in Ireland in 2012 (the majority of which at 98.4 percent employ less than 50 people). This represents a decline since 2006 when at the height of the boom there were 211,950 active enterprises recorded<sup>101</sup>.
- Enterprise births have recovered since 2010, with a total of 12,551 enterprise births recorded in 2012 (although they peaked at 16,696 in 2006 during the boom years)<sup>102</sup>.

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96 Depending on data availability and quality

97 Set out in Section A – The economic context

98 Data is drawn from CSO (economy wide) and from DJEI's Annual Employment Survey (AES) and Annual Business Survey of Economic Impact (ABSEI) in respect of enterprise agency-supported enterprises

99 A further number of quarterly reports are needed before we can fully establish the strength and sustainability of an apparent recovery

100 CSO, QNHS, Q3 2011

101 CSO, Business Demography 2012 (latest available data)

- Total exports from Ireland were €214.9 billion in 2014<sup>103</sup>. This was the highest that exports have historically been and a 12.3 percent increase on 2013.
- Exports in agency-supported enterprises were €143 billion in 2013, having recovered since the recession and exceeding levels at the height of the economic boom.
- In agency-supported enterprises, there has been a trend of positive growth in employment since 2011 with 25,616 net new jobs created over the period 2012-2014. Gross job losses are at their lowest level for more than a decade.
- Although impacted by the recession, direct expenditure in the Irish economy reached a record high of €44 billion in 2013 for both Irish and foreign owned firms<sup>104</sup>.

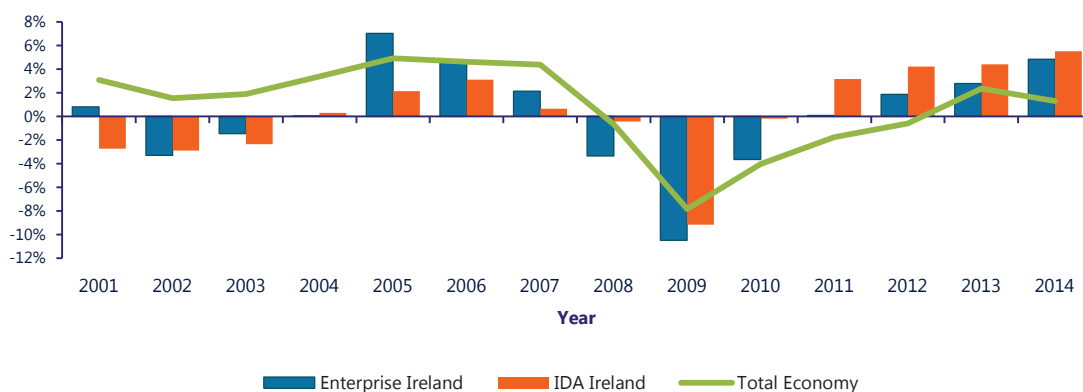
**Agency-supported employment performance compared with economy wide employment performance**

Employment growth in agency supported firms is generally behind the national average from 2001 to 2007, reflecting the very strong growth in the domestic sector over this period, in addition to the challenging international trading conditions in the early part of the decade (Figure 1).

The employment impacts of the collapse in the economy are evident in 2008-2009 which saw employment decline dramatically across Enterprise Ireland and IDA Ireland supported enterprises and the economy as a whole.

Notably, in a reverse of the trend from 2001-2007, employment growth in the exporting sectors has been more advanced than that of the wider economy since 2009, reflecting the greater resilience and competitiveness of these entities and persisting structural issues in the domestic economy.

**Figure 1 IDA Ireland, Enterprise Ireland and total economy employment growth 2001-14**



Source: CSO QNHS, Forfás & DJEI Annual Employment Survey (various years)

102 Ibid

103 Balance of International Payments, 2015, CSO Statbank

104 Agency-supported enterprises, DJEI Annual Business Survey of Economic Impact, 2014

Higher levels of productivity, growth in RD&I investment, and increased levels of export intensity point to continuing improvements in capacity, capabilities and competitiveness at the level of the enterprise:

- Irish productivity levels improved considerably between 2008 and 2013 with average annual growth of 2.6 percent in GDP terms (1.85 percent in GNP terms) – however much of Ireland’s improved performance arose from changes in the composition of employment in Ireland during the recession (including significant contraction of the construction sector).
- Business investment in RD&I, in value terms, was sustained during the recessionary period with expenditure remaining relatively static between 2009-2011. More recently however, expenditure has increased from €1.86 billion in 2011 to €2.02 billion in 2013. There are also a greater number of entities now engaging in RD&I, with a strong positive trend evident since 2007 (although more so amongst the Irish owned cohort – Figure 2)<sup>105</sup>.

**Figure 2** Number of R&D active firms by ownership, 2003 - 2013



Source: Forfás BERD surveys 2003 and 2005 & CSO BERD, Statbank 2007-2013

- Of the total business investment in RD&I, 58 percent (or €1.17 million) was invested by services sector enterprises in 2013. Investment in R&D by services firms has continued to increase in value terms over since 2009.
- Export intensity in Irish owned enterprises has increased from levels of 37 percent of total sales in 2003 to 51 percent in 2014<sup>106</sup>.
- Ireland has the highest proportion of 30-34 year olds with tertiary educational attainment at 52.6 percent, compared to the EU 28 average of 36.8 percent<sup>107</sup>.

<sup>105</sup> Forfás BERD surveys 2003 and 2005 & CSO Statbank 2007-2013 (latest available data)

<sup>106</sup> DJEI Annual Business Survey of Economic Impact and Annual Business Review, Enterprise Ireland, April 2015

<sup>107</sup> [http://ec.europa.eu/europe2020/pdf/themes/28\\_tertiary\\_education\\_02.pdf](http://ec.europa.eu/europe2020/pdf/themes/28_tertiary_education_02.pdf)

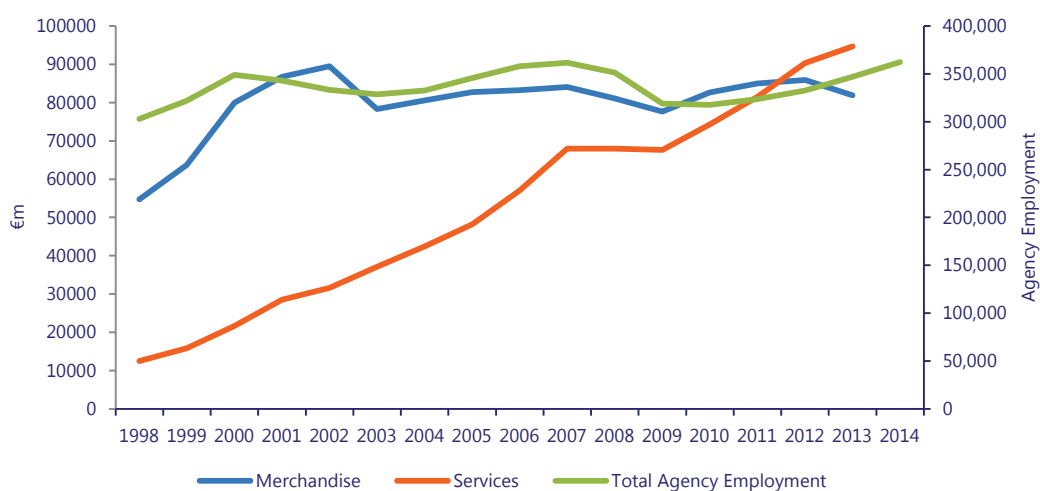
- The occupational profile continues to demonstrate a shift toward higher skills levels.
- Ireland’s entrepreneurs are more likely to have higher levels of education relative to EU/OECD comparators.

... and there are indications that a policy focus on scaling is yielding results

An analysis of the Enterprise Ireland cohort of companies indicates that out of a population of 2,900 companies, 18.4 percent had turnover in excess of €10 million in 2013 when compared with 14.4 percent in 2010<sup>108</sup>. An additional 22 enterprises now record turnover in excess of €50 million over the same period. This analysis does not take account of any large scale enterprises that may have been acquired by foreign owned enterprises (and transferred to the IDA Ireland portfolio).

Irish owned enterprises are increasingly mobile (and are likely to be over the coming decade). Analysis of a sample of firms engaging in outward direct investment (ODI) shows increases in not only foreign sales and employment but also positive impacts on the operations based here.

**Figure 3 Merchandise and services exports, €m (left hand axis) and total agency employment (right hand axis), 1998-2013/4**



Source: Balance of International Payments, CSO Statbank, various years (BPM5 series) for exports, and DJEI Annual Business Survey of Economic Impact, various years for agency employment

*The contribution of services to economic growth continues...*

- The growth in services continues apace and the trend in increasing contribution from services activities to value added, exports and employment remains in evidence (Figure 3);
- Services now contributes a total of 75 percent<sup>109</sup> to employment (total economy and including public services), and 54 percent<sup>110</sup> to total exports;

108 The scaling analysis was dependent on data availability and was undertaken over different time periods to account for the volatility over the past decade. Therefore the results are indicative only

109 CSO, QNHS Q2 2015

*Nevertheless, manufacturing continues to play a key role...*

- At the same time, industry<sup>111</sup> has broadly held its ground in terms of contribution to value added in the past 5 years and should remain a core plank of enterprise policy over the coming decade.

*Increasing sectoral concentration ....*

As regards goods and services combined over a 10 year time frame (acknowledging that the data comes from different primary sources<sup>112</sup>) there are some notable shifts in Ireland's exporting base. Based on CSO data:

- Three sectors - chemicals, computer services and business services now account for 66 percent of total exports in 2013.
- Chemicals continue to contribute the highest proportion to exports in 2013 (at 29 percent).
- There is a dramatic shift in the proportion of computer services exports contributing to total exports, rising from 11 percent in 2003 to 22 percent in 2013.
- Business services have also increased from six percent in 2003 to 15 percent of total exports in 2013, reflecting the rise in internationally traded services.
- Machinery and transport equipment has decreased from 20 percent in 2003 to six percent of total exports in 2013, reflecting in the main, the decline in computer manufacturing.
- Tourism plays an important role in Ireland's economy and is estimated to have contributed over €3 billion in foreign earnings in 2013. Tourism was badly hit by global events and the economic downturn and although foreign earnings are almost the same as in 2003, its contribution to exports overall has declined from 3 percent in 2003 to two percent in 2013.

This data should be considered together with employment and value added data (Figure 4) – as sectors contribute differently to the economy – illustrated for the agency supported client cohort below. In addition, the apparently 'concentrated' sectors are internally diverse and new opportunities for growth will arise in a number of ways (see Section D – Strengthening resilience in the enterprise mix).

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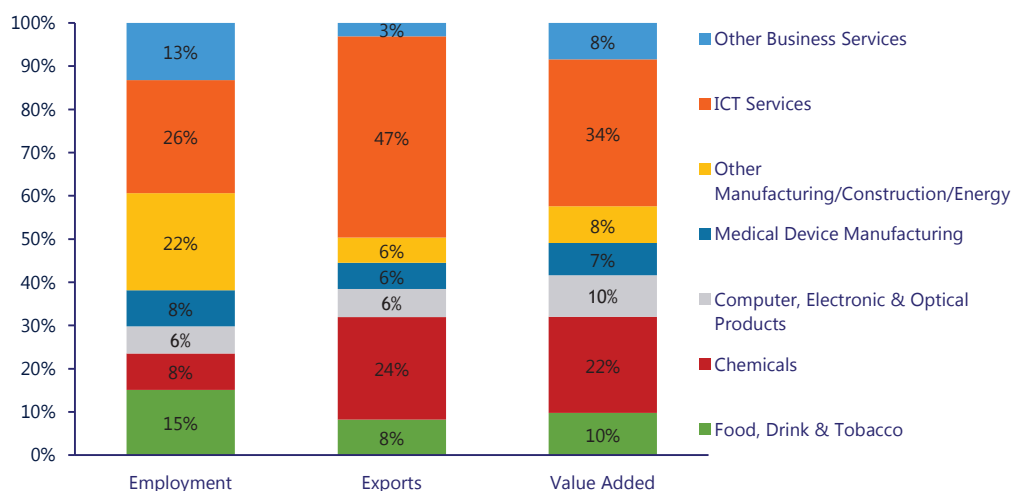
110 CSO Balance of International Payments, BPM5 series, 2013

111 Industry includes other activities as well as manufacturing, including mining and quarrying, energy, water and waste. Manufacturing contributes circa 90 percent to employment in industry

112 Due to changes relating to the roll out of BPM6 methodology by the CSO in the Balance of Payments series from 2012 onwards, directly comparative statistics for services exports are only available until 2013



**Figure 4** Distribution of employment, exports and value add, agency client cohort 2013



Source: DJEI Annual Business Survey of Economic Impact, 2014

... as well as geographic market concentrations...

- In terms of destination of goods exports from Ireland, the EU (excluding Great Britain and Northern Ireland) is the largest market served with €35.5 billion in exports in 2014<sup>113</sup>.
- Enterprise Ireland supported enterprises export almost 37 percent of goods and services to the UK market. There has been an increase in both value and percentage terms of exports to Asian markets. In percentage terms, exports to Asia increased from six percent in 2010 to 7.5 percent in 2014<sup>114</sup>.
- In terms of FDI, almost 70 percent of the total employed directly in agency-supported foreign owned entities here arise from US owned MNCs, and the US remains a key source of investment. Ireland's performance in a European context is relatively weak in terms of share of outward projects from Japan, China and India where there has been a substantial volume of FDI projects over the 2008-2012 period<sup>115</sup>.

*The public sector... A significant contributor to employment*

- The public sector contributes 26 percent to employment (and 15.5 percent to GVA)<sup>116</sup>. An efficient and productive public sector is important from an enterprise perspective – particularly when involved in providing business relevant services directly or indirectly

113 External Trade - value of merchandise exports, CSO Statbank

114 Annual Business Review, Enterprise Ireland, April 2015. By way of comparison, about 14 percent of exports from Finland go to Asia (2012), see Macro Imbalances, Finland 2013, European Economy, Occasional Papers, April 2013

115 Policy Statement on Foreign Direct Investment in Ireland, DJEI, July 2014

116 Latest available data. GVA relates primarily to salaries and wages as the public sector is a non-trading sector. Public sector employment and GVA was derived by summing NACE Codes O-Q

(e.g. through associated offices such as Companies Registration Office) and/or through the implementation of fit for purpose regulation<sup>117</sup>.

*Although considerable challenges remain...*

Despite positive progress, many challenges remain. A small number of 'new' structural aspects have been highlighted that warrant consideration from a policy perspective:

- The apparent sectoral/geographic market concentrations in the export oriented base provides some cause for concern and raises the question as to the extent to which we may be vulnerable to external sector specific shocks.
- Some regions have been more negatively impacted by the recession in terms of the decline in number of active enterprises (more than 20 percent in some counties) and employment.
- Ireland's enterprise structure is such that the contribution of modern manufacturing and internationally tradable services is large when compared internationally; Actual productivity levels in particular sectors and activities is in some cases masked by the (predominantly) foreign owned large scale entities.

*A constantly changing and intensely competitive dynamic...*

- There are circa 2,200 foreign owned entities based here primarily serving the domestic market, involved in activities such as retail, business services, accommodation/hospitality, telecoms, etc. Irish owned locally trading entities are facing international competition on their doorstep.
- Ireland's early stage entrepreneurs are involved to a greater extent in consumer services sectors relative to OECD or EU28 averages, and a lower proportion expect to have customers outside the country.

*In terms of RD&I, the analysis shows that:*

- Irish-owned enterprises are somewhat more likely to be involved in basic/applied research relative to foreign owned enterprise (although collaboration is less pervasive than desired).
- The majority of total BERD is accounted for by foreign owned entities with approximately half of foreign-owned firms based in Ireland being R&D active.
- Although progress has been made, there remains considerable scope to increase the number of enterprises engaging with and the level of engagements with research institutes.

*Employment growth is benefiting those with higher education*

- Much of the employment uplift has benefited the 35-54 year cohorts and those with third level qualifications – the younger generation has been disproportionately impacted by the downturn, raising concerns with regard to youth unemployment.

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117 There is a strong focus on enhancing efficiencies and productivity in the Government's Public Service Reform programme led by the Department of Public Expenditure and Reform (DPER)

- A high degree of labour market transitions in certain occupations raise concerns that short term contract work is increasingly becoming the norm in certain sectors which may impact on some people's ability to regain full access to the labour market.

*Yet, there are skills shortages<sup>118</sup> even in this period of high unemployment*

- Skills shortages arise where there are not sufficient numbers of suitably qualified and/or experienced people available. Although relatively low in some sectors and occupations, they do need to be addressed<sup>119</sup>.

*The collapse of construction post 2007 has longer term repercussions*

- The impacts of the housing collapse are far reaching. In employment terms, construction grew to 270,000 or 13 percent of total employment, more than twice that of many other developed economies. Employment fell back to 96,000 or five percent in 2013 and in 2015 stood at 125,900 or 6.4 percent of total employment<sup>120</sup>. While there is spare capacity within the construction sector at present and cyclical factors will address some of the overhang, it is most unlikely to return to the heights experienced at the peak in 2007. This has significant consequences for addressing unemployment and redirecting skills to other areas of the economy<sup>121</sup>.

## Implications for enterprise policy

The analysis has pitched up a number of areas that warrant a policy focus over the next decade. These, together with the analysis of global trends, have served to inform and focus the development of our enterprise policy to 2025.

### Changing enterprise structure

The increasing role of services (and digitisation) has implications in terms of employment, value added, productivity, innovation and exports; of direct economy expenditures and multiplier effects); of new opportunity areas for growth; and of the ongoing transformational change required at the level of the firm. At the same time, retaining a strong base of manufacturing capability is crucial if we are to embed resilience and to continue to attract investments in RD&I<sup>122</sup>. A continued focus on transformational change at the level of the firm is crucial to deepen resilience and to strengthen adaptability in an uncertain and fast changing environment.

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118 'Shortage' refers only to a situation where the supply of skills or labour from within the Irish labour force does not meet demand (not necessarily imply a shortage in European Economic Area (EEA) level)

119 The Expert Group on Future Skills Needs (EGFSN) reviews sector specific skills needs and has identified shortages in science, engineering, ICT, business and financial (incl. multilingual capabilities), construction crafts and professionals, toolmakers, welders, healthcare and sales/customer services

120 CSO, Quarterly National Household Survey, Q2 2015, CSO Statbank

121 See also Government Statement on Construction, July 2013, and Ireland's Construction Sector: Outlook and Strategic Plan to 2015, Forfás July 2013

122 Evidence points to the increasing desire by organisations to co-locate RD&I activities close to production; Making it in Ireland, Manufacturing 2020, Forfás, 2012

The nature of and connections with Global Value Networks (GVNs) is not yet well understood in terms of services activities<sup>123</sup> and what this might mean in terms of facilitating collaborations and connections between Irish owned and foreign owned entities. Our policies also need to consider the extent to which newly globalising MNCs from emerging economies offer potential for SMEs to link into their (nascent) GVNs as they look to access strategic assets/resources and embrace a broad range of approaches to making investments<sup>124</sup>.

### Addressing regional challenge and potential

Enterprise policy over the next decade needs to cater to the differing needs across regions to optimise potential for growth, taking into account different industry structures/profiles, stages of development and location specific strengths and weaknesses. The development of the Regional Action Plans will deliver the bottom up analysis required to strengthen our understanding of potential and to energise commitment to take action (nationally, regionally and locally).

### Increasing sectoral and market concentrations .... or toward smart specialisation?

The concentrations, both in terms of export markets and sectors, may leave us somewhat vulnerable to external shocks. At the same time, the concept of smart specialisation is key in terms of building and sustaining comparative advantage. Our policies need to manage a balance between specialisation (which, depending on how this is interpreted could translate into overreliance on specific technologies/sectors and therefore increase vulnerability) and diversity (which can offer a certain degree of resilience).

### Continuing to build contributions from Irish owned enterprises

We need to consider how (and if) policies can influence the sectors/activities that entrepreneurs engage in from the outset given the current emphasis on consumer services and locally trading activities - focusing on driving innovation and productivity from the outset, realising the potential to export and our ambition to extend survival rates<sup>125</sup>.

In terms of domestically trading enterprises (including sectors such as retail, construction, business services) well designed and considered enterprise policies could facilitate these companies to compete effectively e.g. through a step change in the use of ecommerce, enhanced productivity, innovation etc.<sup>126</sup>.

A strengthened and targeted approach to facilitate Irish owned enterprise to grow to scale is required, taking into account specific barriers along the company lifecycle, ambition and readiness of mid-sized companies, growth strategies that may include ODI, potential for clustering, and effective use and sequencing of direct interventions.

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123 Although there is considerable analysis undertaken internationally to understand the evolution of GVNs in terms of manufacturing activities, there is relatively little available in the context of services. See Section C - Connectedness

124 Including greenfield, partnerships, joint ventures, acquisitions, mergers etc.

125 Note also the recent launch of the National Policy Statement on Entrepreneurship in Ireland, DJEI, September 2014

126 Taking into account rationale for government intervention, additionality and displacement effects

### Foreign owned entities... the potential for more to invest in RD&I?

More effective policies and approaches to leveraging investment from foreign owned enterprises that are not currently engaged in RD&I is required, particularly given the relatively low engagement to date, the significant State investments in developing RD&I infrastructures, the increasing potential for innovation in services and in advanced manufacturing.

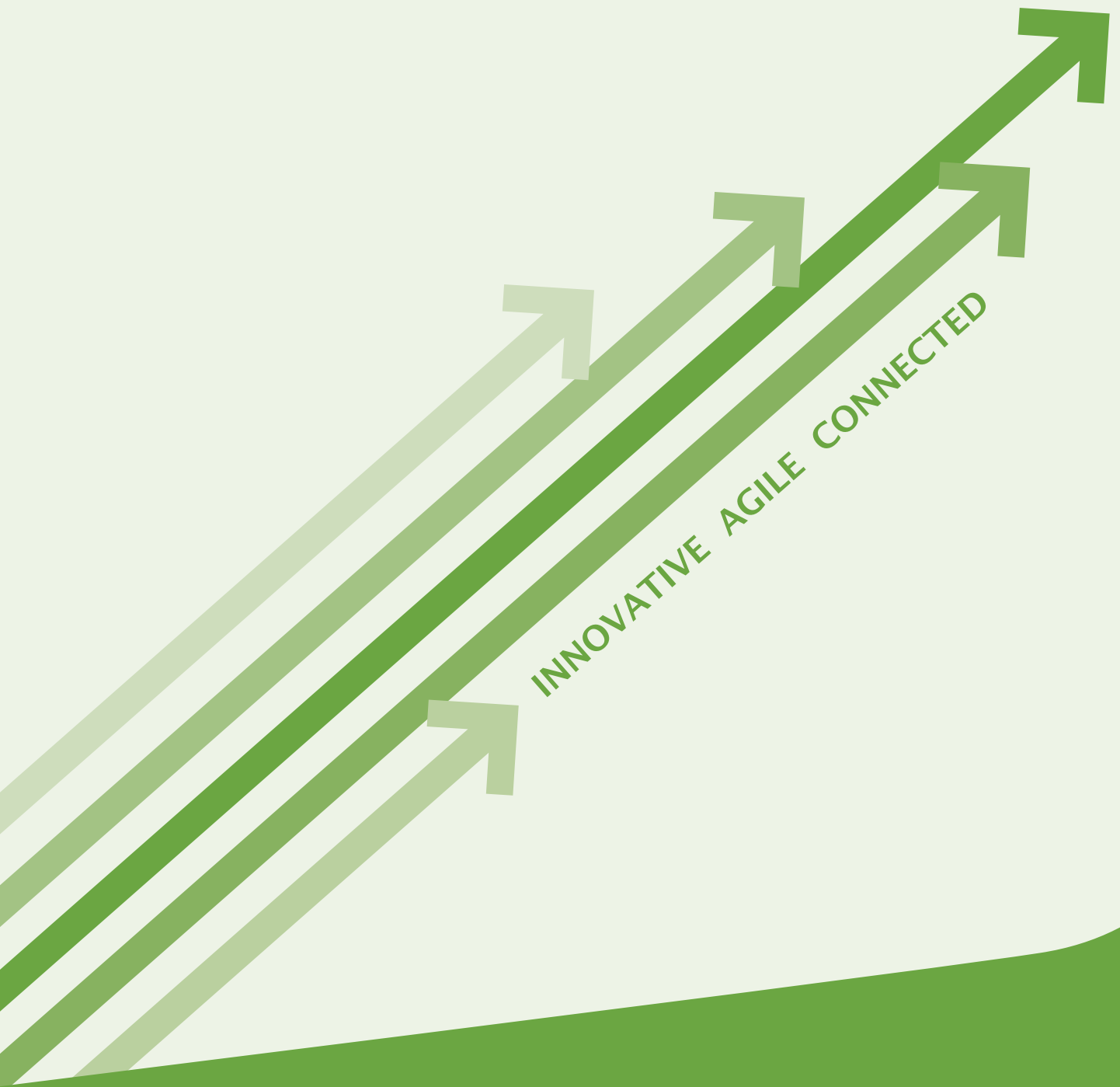
### Talent and skills mismatch

The availability of appropriate skills and talent comes to the fore in any discussions with business - whether foreign or Irish owned. The development of a new National Skills Strategy is crucial in this regard - and ensuring that it is informed by this Enterprise Policy 2025. Continued and effective engagement between industry and higher education institutes (HEIs) is crucial to manage the demand and supply and how this might be impacted by changing sectoral demands and increasing automation, as are focused policies on attracting mobile talent.

## Conclusion

The collective intelligence derived from the analysis of global trends and of the performance of Ireland's enterprise over the past decade provides the backdrop against which we have developed Ireland's enterprise policy to 2025. It combines a longer term external perspective with a critical analysis of Ireland's potential.

The challenge is for us to stretch our thinking, to be ambitious, and yet to remain grounded in reality. A policy that aims to set the strategic direction over the next decade cannot (and should not) be prescriptive - but it does set the framework and the informed basis that allows us to continuously anticipate and respond effectively.



# Section B

Vision, strategic objectives  
and potential



# A vision for Ireland's enterprise potential

## Introduction

A competitive enterprise base drives productivity growth, innovation and investment and creates jobs, delivering higher standards of living for all. Through exchequer returns, enterprises contribute to the provision of essential public services including infrastructures, healthcare and education. Enterprises also contribute to enhanced quality of life and the attractiveness of our towns and cities by providing quality retail outlets, restaurants, professional and personal services and by engaging in collaborative regionally based initiatives. In addition, innovative enterprises can contribute to realising national policy priorities in areas such as smart infrastructures, healthy ageing, food security and a sustainable environment to deliver better outcomes for our citizens.

Global competition for investment and talent has intensified, and our Irish owned enterprises need to win sales in overseas markets if we are to attain our ambition for growth. Global trends demonstrate that enterprises need to be attuned to the opportunities and challenges as business models are disrupted, as global value networks become more complex, as ways of working are shifting and 'new' sectors and activities emerge. Change is the only constant and relative competitiveness is a moving target.

### Ireland's economy is at an inflection point...

We are right to acknowledge the considerable progress that has been made since 2011, and that we are experiencing a return to growth following a period of deep recession. We have a strong basis from which to grow, and we have significant potential for growth in both manufacturing and services activities. But we cannot and should not underestimate the genuine and considerable challenges facing us as we look out over the next decade:

- Global competition for investment and talent has intensified as we aim to be recognised internationally as innovative and entrepreneurial;
- New technologies are disrupting industry norms and enabling transformational change. We want to ensure that our enterprises are well placed to take advantage of such opportunity;
- Relative competitiveness is a moving target and we want to be placed in the top rankings;
- We have had higher levels of emigration and a higher level of unemployment than is acceptable; and
- A range of structural issues in our economy and enterprise base remain that need to be addressed.

We have developed Enterprise 2025, reflecting on the global environment and putting in place new approaches to ensure that our policies across government remain fit for purpose in a changing world. Our policies will continue to be anticipatory and responsive and informed by analysis and evaluation.

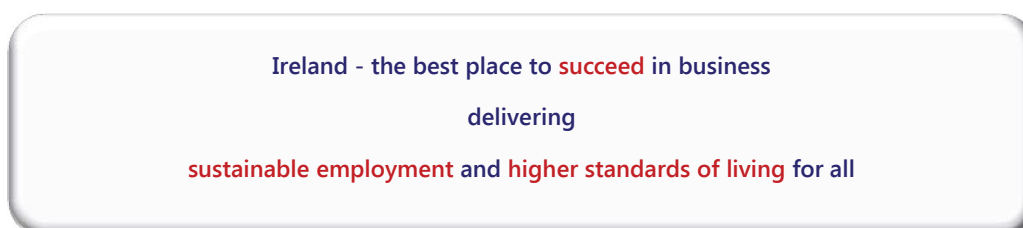


### Enterprise policy to 2025 – a systems approach

Internationally, enterprise policy is evolving toward a 'systems' approach, with the role of Government acting as a facilitator, coordinator and market creator in addition to an investor<sup>127</sup>. Governments in other countries are increasingly engaging in creating networks, enabling cluster development, addressing coordination failures, and aligning strategic priorities through effective and ongoing dialogue with enterprise. A systems approach recognises that enterprise can play a constructive role in addressing broader policy objectives through innovation and partnership - so called 'grand challenges', including for example sustainable energy, healthy ageing, smart cities etc. This evolution in enterprise policy internationally has informed our own policy approach.

Enterprise policy is broad reaching and requires a whole of government commitment. Although DJEI is the principal governmental advocate for the enterprise sector, many other government departments play a crucial role in delivering on complementary policy actions to provide an environment that is conducive to job creation and supports the development of a competitive and sustainable enterprise mix<sup>128</sup>.

### Our vision for enterprise to 2025



*Our successful enterprises will be competitive, productive and globally connected, enabled by our entrepreneurial and innovative culture that is embodied in people, place, the policy system and government*

*where*

*Enterprise is valued for creating quality jobs and for driving sustainable growth*

*and where*

*Enterprises play a crucial role in addressing grand challenges including through partnerships in research and innovation*

*delivering higher standards of living for all*

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127 See Beyond Industrial Policy: Emerging Issues and New Trends, Warwick, K. I, OECD STI Policy Papers, No. 2, 2013; and Enterprise policy evaluation: Is there a 'new' way of doing it?, Lenihan, H., Evaluation and Program Planning, 34 (4), 323-332, 2011

128 A number of policies and strategies are currently being developed or have recently been completed that are directly pertinent, including for example: the forthcoming National Skills Strategy; Strategy for Science, Technology and Innovation; Trade, Tourism and Investment Strategy; and National Planning Framework; Food Wise 2025; Construction 2020; Harnessing Our Ocean Wealth; People, Place and Policy: Growing Tourism to 2025; and IFS 2020

## Our ambition

### Driving export-led growth – delivering sustainable employment

For Ireland as a small open economy, sustainable long term growth is dependent on continued success in international markets. Our policy focus is predicated upon growth fuelled by foreign earnings derived from exports in the first instance as distinct from being driven primarily by domestic consumption, which we know is an unsustainable growth model.

Our ambition is to:

- achieve the potential for growth in Irish owned manufacturing and services exports by between 6 and 8 percent annually to 2020;
- realise increased export intensity of Irish owned firms to between 55 and 60 percent; and
- support geographic market diversification (including to high growth emerging markets) so that Irish owned exports to non-UK markets increase by 50 percent; and
- attract and grow export oriented foreign direct investment.

An export led strategy is not just about exporters. In addition to generating greater wealth than would be possible through only domestically traded activities, there is a substantial ripple effect in terms of job creation across the entire economy and an increase in technology adoption, innovation, standards and best practice overall.

### Stretching our employment ambitions

We are ambitious. We can achieve full employment that is sustainable and resilient over the longer term by taking the actions set out in Enterprise 2025.

Our ambition is to:

- reach 2.180 million people in employment and an unemployment rate of 6 percent by 2020; and to
- sustain full employment over the decade to 2025.

The potential to reach 2.180 million in employment by 2020 is based on the premise of export-led growth and would see an additional 266,000 people at work from a 2014 base<sup>129</sup>. We see the potential to achieve a 6 percent unemployment rate at a faster pace than that set out in the projections prepared in the context of Budget 2016 that forecast a 6.5 percent unemployment rate by 2020<sup>130</sup>. We are aware that this will be challenging and that we have no control over global demand and other external factors. We can strongly influence our chances of success by focusing on supporting the productive sector, enhancing our relative competitiveness, leveraging existing comparative advantage in key sectors, addressing structural issues in the economy, improving productivity and our capacity to innovate.

Our enterprise development agencies, IDA Ireland and Enterprise Ireland play a key role in providing direct supports and services to export oriented enterprises. They will contribute circa 140,000 jobs (i.e. 75,000 direct jobs that will stimulate an additional 65,000 jobs indirectly) to the

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<sup>129</sup> Annual average employment over four calendar quarters, 2014

<sup>130</sup> Short-term economic outlook, Presentation to the Oireachtas Committee on Finance, Public Expenditure and Reform, Economics Division, Department of Finance, 6th October 2015

potential private sector employment growth to the period 2020. There is potential for a further 30,000 tourism related jobs<sup>131</sup>.

We will continuously monitor our employment growth patterns in terms of an export/non-export 'balance' and avoid the mistakes of the past.

Our policies will facilitate the creation of quality employment, taking into account the multi-dimensional aspects that define quality including: ensuring opportunities for advancement that involves workplace learning and development; ensuring that people are educated and trained to meet the needs of industry; recognising the opportunities presented by entrepreneurship as an alternative career path; and ensuring a system that facilitates flexibility without exploitation. Enterprise 2025 envisages the creation of a range of career opportunities across a broad spectrum of skills and across manufacturing and services activities.

### Enhancing the employment prospects of the unemployed

We will ensure that individuals are trained in relevant skills and competences to enhance their prospects for employment and that meet the needs of enterprise in a changing environment.

Looking out over the next decade, a return to sustainable economic growth and job creation will likely lessen the unemployment challenge considerably, although unemployment remains at an unacceptably high level at present. The activation initiatives as set out in Pathways to Work 2015 remain relevant and aim to enhance peoples' prospects for employment. Although the demand for these initiatives over the coming years will decline as more employment opportunities come on stream, a more intensified engagement may be required with the reducing cohort of unemployed to achieve our ambition for full employment.

### Investing for competitive advantage

We will realise a step-change in the performance of our enterprises and the growth potential of our economy by focusing our capital investments to support the productive sector across a range of key areas.

In the long run productivity growth is essential to improving living standards. Many of the resources that enterprises draw on to maximise productive capability come from the surrounding environment, including for example, a sound macroeconomic environment, the education and skills base of the labour force, transport and communications networks, science and technology know-how, competition and regulation policies, finance etc. It is important that increases in labour costs are accompanied by productivity improvements in the coming years.

Our ambition is to:

- restore our competitiveness to rank in the top three of the most competitive small countries in the world;
- realise productivity growth across the economy to levels ranking amongst the top five EU countries averaging 2.0 to 2.5 percent per annum over the long term; and

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131 People, Place and Policy: Growing Tourism to 2025, Department of Transport, Tourism and Sport, includes an overall target of 50,000 additional jobs in the tourism sector by 2025 - the data set out here has been interpolated to align with overall employment potential to the period to 2020

- contribute to the restoration of living standards to pre-recession levels through our enterprise policies and maintain an above average position relative to the EU-19 average over the period to 2025.

We will take a whole of enterprise approach, leveraging the potential in all sectors of our economy. This will strengthen our resilience in today's global environment where the pace of change has accelerated and where competition for investment and mobile talent has intensified. We will focus our efforts to achieve a step change in enterprise performance in terms of productivity, the capacity to innovate and to grow to scale.

We will build competitive advantage and differentiate what Ireland has to offer in terms of Talent, Place-making, Innovativeness and Connectedness.

We will not realise our ambition unless we have the fundamentals working effectively: finance for growth; a competitive tax environment; relative cost competitiveness; and quality infrastructures. Without the business environment basics the impact of other interventions will be compromised.

### Enterprises playing their part

Our strategies, policies and interventions work best when they are informed by the needs of business and when industry engages effectively and with commitment. We need enterprises to play their part by: engaging with the education and training sector; acting as champions in their own locale; providing opportunities for students with structured industry placements; and participating in apprenticeship programmes.

This heightened level of collaboration across enterprise and the broad government system is a challenging but essential element in achieving the ambition set out in Enterprise 2025.

## Our strategy - differentiators

### Developing and attracting *talent* for the 21<sup>st</sup> century

We will develop, nurture and attract world class talent. Our ambition is to offer the skills, creativity and adaptability required in the 21st century workplace. We will:

- have a closer level of engagement between our education system and enterprise than ever before, and demonstrate the agility required in today's dynamic environment;
- place a greater emphasis on leadership and management development – equipping more of our people with the ability and ambition to start, innovate and grow businesses; and
- continuously anticipate, identify and address critical skills gaps needed to deliver on our ambition for self-sustaining clusters.

### Optimising regional potential - *place-making*

We will develop attractive places to invest, live and work throughout Ireland and to optimise the potential of our regions. We will:

- stimulate job creation throughout Ireland so that unemployment in each region is within one percent of the State average;

- build on distinctive regional strengths and assets<sup>132</sup>, celebrating difference and realising potential for job creation, informed by our Regional Action Plans;
- develop competitive, dynamic, sustainable and globally connected city regions;
- stimulate locally based enterprise initiatives and sector (and cross-sector) clustering activities to drive greater growth through collaborative actions; and
- make strategic infrastructure investments.

#### Embedding *innovativeness* in our enterprises and systems

We will be internationally renowned as being innovative in what we do and in how we do it, across all aspects of the business, including for example, business models, consumer engagement, channels to market, organisation structures, and modes of collaboration. We will strengthen our innovation system and will leverage our investments in RD&I to deliver impact. Our ambition is that our companies will derive competitive advantage through innovation. We will:

- maintain our focus on building excellence in scientific research in areas where we can develop leadership positions;
- strengthen the connections between researchers and enterprise through focused investment and supports on nearer to market infrastructures;
- build the innovation, design and problem solving capabilities of our enterprises so that innovativeness is embedded in 'how we do things';
- ensure that our regulatory system is pro-innovation and supportive of new and emerging areas of opportunity without compromising the protective role that it plays; and
- set out grand challenges and will partner with enterprises and the research community to deliver innovative solutions that address issues of national priority.

#### Being *connected* – internationally, nationally and regionally

An open economy relies on effective connections. We will build connections regionally, nationally and internationally through business, people and the research system. We will:

- roll out a new approach for a National Clustering initiative in key sectors of strength that has visibility and stature in an international context;
- sustain our leadership position in the digital economy underpinned by a robust and well balanced regime and advanced technology infrastructures; and
- build our trade and investment footprint globally to realise greater opportunities arising from high growth markets, for sustainable export growth, investment and tourism.

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132 Distinctive regional strengths and assets encompass a broad range of factors, including for example, the enterprise mix, physical and digital infrastructures, access to skills, education and research and the dynamic of a location enriched by national heritage and culture

## Our strategy - resilience

### Building resilience in our *sectoral mix*

We will tailor our policies in a way that will strengthen our resilience across a range of manufacturing and services sectors and activities. We will demonstrate the agility needed to respond to the accelerated pace of change as sectors evolve and new opportunities arise. We will:

- take a portfolio approach to realising the potential across the economy in a sustainable and balanced way so that we do not become overly reliant on any one sector or activity;
- identify emerging areas of opportunity with effective horizon scanning and foresight;
- implement a systematic approach to sector ecosystem development to capture new opportunities in the context of an internationally competitive environment; and
- leverage our distinctive enterprise base that includes innovative Irish and foreign owned enterprises through from start-ups to large scale and multinational entities.

### Achieving a step change in *enterprise performance*

We will work with companies to realise a transformative step change in their performance and to embed a culture of innovation and continuous change. We will:

- stimulate a flourishing of **entrepreneurship** across all sectors and throughout the regions;
- work with ambitious companies to achieve a **significant step up in their potential to scale** and to grow on international markets;
- **assist locally trading and employment intensive enterprises** to improve competitiveness;
- **attract, transform and sustain FDI** that will add value to our economic fabric and will enable access to global value networks for our Irish owned enterprises;
- achieve a significant uplift in enterprises **investing in RD&I** – more enterprises and greater levels of investment - delivering innovative products and services; and
- stimulate **greater collaboration** between foreign and Irish owned enterprises and between enterprises, HEIs and the research base to develop critical mass in key sectors and clusters of sustainable competitive advantage.

See Box 1 for a quantitative overview of performance potential.

## Our strategy – excelling in getting the basics right

### Finance for growth

Our ambition is to establish a comprehensive and competitive funding environment to support our enterprises through from pre start-up to maturity, so that no viable business opportunity will falter due to lack of access to appropriate funding. We aim to ensure that cost of finance is aligned with our European competitors, and moves to the euro average rate and to stimulate

increased business investment levels. Building on progress made, including for example the establishment of ISIF and SBCI<sup>133</sup> and the ongoing work of the SME State Bodies Group, we will:

- drive competition in the lending market (including non-bank sources of funding) and will work with financial institutions to facilitate the provision of a wide range of products and services to support our enterprises ambitions; and will
- strengthen the capabilities of Irish owned enterprises in terms of the strategic use of funding options for growth.

### A growth friendly tax regime

We will continue to deliver an internationally competitive and reputable tax environment that provides certainty, stability and predictability; that facilitates business decision making; and that supports productive investment, internationalisation and entrepreneurship. We will:

- maintain a competitive environment in Ireland for internationally mobile investment built around a corporation tax rate of 12.5 percent;
- leverage taxation policy to stimulate entrepreneurship, innovation, enterprise development and growth; and will
- support Ireland's attractiveness for the talent our enterprises need.

### Sustaining relative cost competitiveness

We will aggressively and systematically address domestically influenced cost factors that impact on our relative competitiveness and business input costs so that Irish based enterprises can compete effectively in an international context and that Ireland can continue to attract mobile investment. We will:

- take the actions necessary in the areas that are within our control to influence: in energy; waste; property; and business regulatory costs; and will
- build competitive markets, removing barriers to entry and ensuring a level playing field.

### Investing in quality physical infrastructures

Our ambition is to ensure that Ireland boasts high quality economic infrastructures that facilitate the mobility of people, goods and services – regionally, nationally and internationally - and that meet the future needs of our enterprise base. We will:

- prioritise investments in economic infrastructures, informed by the future needs of an evolving enterprise base; and will
- ensure that our regulatory environment facilitates an increase in private sector investment and ultimately delivers more cost effective higher quality services to business users.

## Measuring success

Measurement itself is complex and no one measure shows the complete picture. At the same time, it is important that we focus on a number of overarching metrics complemented by firm level performance metrics to assess economic and enterprise performance. The Action Plan for Jobs 2015 has placed a heightened focus on impact and outcomes arising from the broad range

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133 ISIF – Ireland Strategic Investment Fund; SBCI – Strategic Banking Corporation of Ireland

of actions it sets out<sup>134</sup>. The National Competitiveness Council (NCC) undertakes a comprehensive analysis and benchmarking of Ireland's business environment against international comparators on an annual basis<sup>135</sup> across a range of competitiveness indicators, broadening analysis to encompass for example the environment for entrepreneurship and clustering.

There are many factors that impact upon an individual firm's performance, and therefore upon the aggregate of enterprise performance and its contribution to Ireland's future economic growth. As a small open economy, global factors are outside of our control. Nevertheless we need to have visibility on whether or not the actions being taken by government and its agencies to support the development of enterprises and actions taken by enterprises themselves are making a difference.

Appendix I sets out the suite of metrics by which we will measure success, both in terms of overarching national outcomes and at the level of the enterprise. They are informed by existing strategies including the Spring Economic Statement, EU2020 strategy, agency strategies and international norms (where applicable). The metrics set out a baseline (most recent) performance and future potential to 2020. Additional relevant metrics will be set out in the forthcoming National Skills Strategy and the forthcoming Strategy for Science, Technology and Innovation, informed by the ambition set out here in Enterprise 2025.

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134 See Action Plan for Jobs 2015, Annex 2 Strategic Ambitions, Examples of Impact Metrics and Action Linkages

135 Ireland's Competitive Scorecard 2015, National Competitiveness Council/DJEI



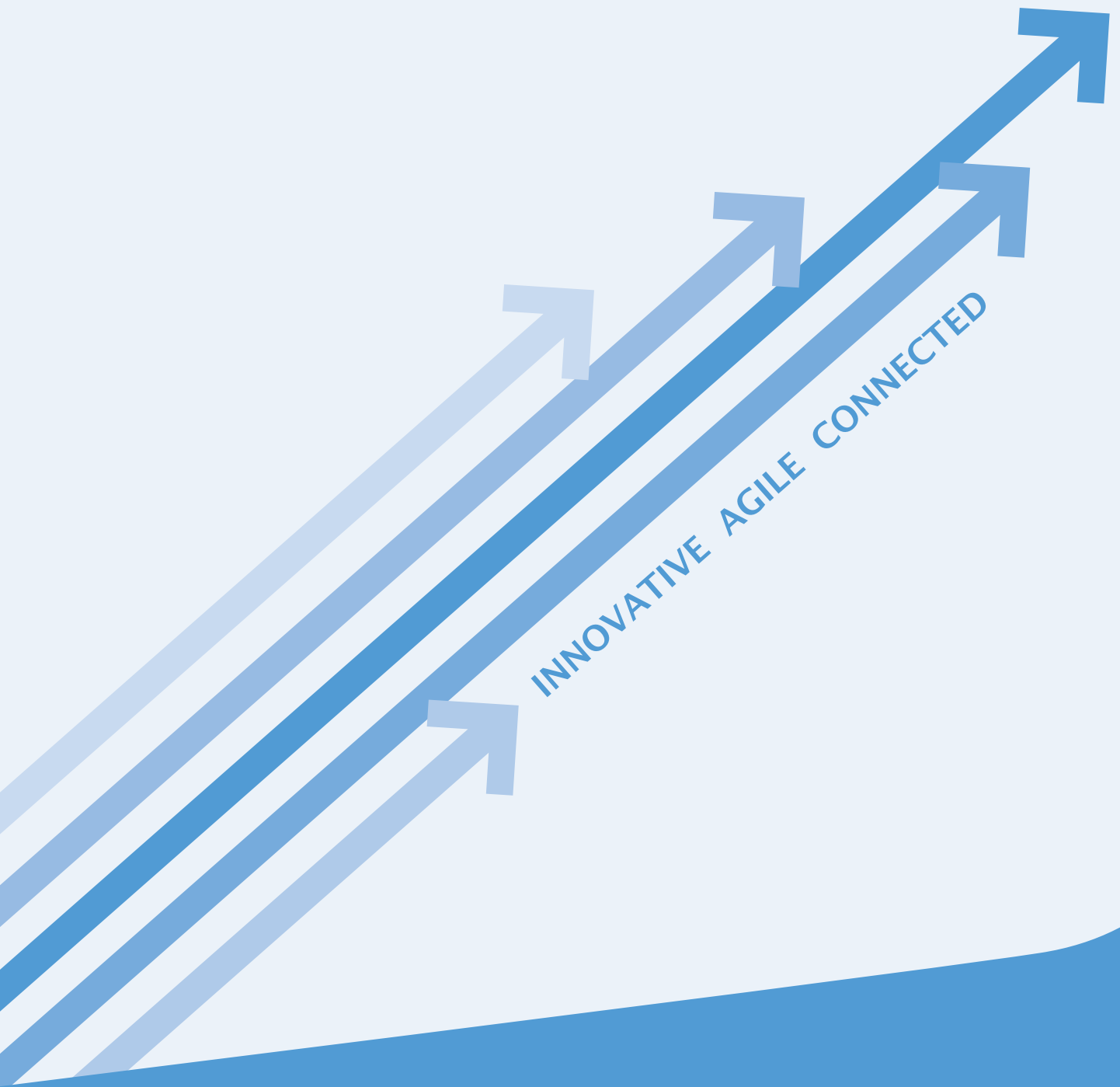
**Box 1 A whole of enterprise approach – realising potential**

Our strategic actions will focus on realising the potential of the whole of enterprise to contribute effectively to Ireland's future economic growth by transforming operations, enhancing productivity and embedding innovativeness. By 2020 we will:

- **Develop Irish owned enterprises to scale:**
  - Increase by one third the number of enterprises with greater than €3 million and greater than €20 million sales currently – and see a significant step change in the numbers of enterprises with sales of €100 million from 54 to 90.
  - Have 1,000 companies investing > €100,000 per annum, and 220 investing > €1 m, in RD&I.
  - Realise annual export growth in the region of 6 to 8 percent and increase the export intensity to between 55 and 60 percent, from 51 percent today.
- **Drive entrepreneurship:**
  - Grow the number of start-ups by 25 percent to almost 16,000 per annum by 2020.
  - Increase the 5 year survival rate by 25 percent.
- **Improve competitiveness:**
  - Double firm level investment in training and upskilling for employees.
- **Compete effectively to grow, expand and sustain FDI:**
  - Increase direct net employment by 42,000 and win an additional 1,080 projects, investing in regions throughout Ireland (extrapolated to 2020 from IDA Ireland's ambitious strategy to 2019).
  - Win €3.6 bn in RD&I investments and have 145 more foreign owned entities engaged in RD&I.
- **Stimulate greater collaboration between foreign and Irish owned enterprises and between enterprises, HEIs and the research base:**
  - Increase the number of enterprise collaborations with the research community supported by SFI and Enterprise Ireland and including IDA Ireland.
  - Increase sourcing of goods and services by export oriented enterprises by 25 percent to reach at least €36 billion by 2020.
  - Coordinate the development of clustering activities of scale focused on clear objectives and with international visibility, and including collaborative responses to grand challenges.
  - Identify and stimulate regionally based activities that will harness the full potential of the regions to create employment<sup>136</sup>.

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136 As set out in the Regional Action Plans for Jobs (forthcoming), DJEI



# Section C

Differentiators



# Talent

## Introduction

The competition for talent has become global, and talent itself has become increasingly mobile. Skills are the global currency of 21st century economies and many countries are placing a major focus on talent development and investment in education and training in the context of global skills shortages and changing demands<sup>137</sup>. Allied with this, how people work and how enterprises configure their human resources and workplaces is undergoing significant change and is expected to continue to do so over the period to 2025.

Ireland's talent has a strong reputation internationally, particularly our can-do mind-set that has led to successful entrepreneurship, growing indigenous multinational enterprises, and continued attractiveness for foreign direct investment<sup>138</sup>. Effective policymaking in the past has played no small part in differentiating Ireland's talent pool in an international context today, with the significant step change in investment in education in the 1960s making a major contribution. Significant reforms that are ongoing in the education and training sector at the present time will continue to ensure that we have a dynamic, responsive and high quality system.

The ambition set out in Section B of the report is based on an expectation of future demand arising across different sectors. It is highly dependent on favourable external conditions, for example, in key trading partners but also, critically, on an appropriate labour market supply and with skills relevant to demand. In this context, fulfilling our future potential growth will likely depend significantly on supply-side factors such as the relevance, quantity and quality of skills from the education system, on migration of skilled people back to Ireland that left in the recession, and on a continuing focus on lifelong learning and upskilling within the existing workforce.

Nurturing the talent pool in Ireland has education as a core driver, but it is not the only dimension. It is about developing, attracting and retaining talent in a highly competitive global environment. It is also about ensuring that the quality of the working life for individuals can be protected and enhanced, and that work pays for all. The Government's Action Plan for Jobs 2015 has set out a *National Talent Drive* as a disruptive reform<sup>139</sup>. This is not a one-off yearlong effort but will be a sustained and elevated focus on ensuring that how we nurture our talent and build our capabilities truly differentiates Ireland in an international context.

To support the enterprise development vision and objectives over the coming decade to 2025 we set out here a comprehensive policy approach encompassing the need to attract, retain and develop our talent, and to ensure we have productive, creative and rewarding workplaces. A new National Skills Strategy (NSS) will be a key vehicle through which the appropriate actions will be realised. Effective delivery will involve a whole of Government effort alongside stakeholders,

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137 <http://skills.oecd.org/>

138 Ireland is currently ranked 12th out of 124 countries globally in the overall Human Capital Index for 2015 which ranks countries in terms of their learning (enrolment, quality, attainment) and employment (participation, skills, vulnerability), The Human Capital Report 2015, World Economic Forum in collaboration with Mercer, 2015

139 Action Plan for Jobs 2015, Government of Ireland, 2015

including employers, the broad education sector, planners of the built environment and public realm, as well as engagement by individuals.

## Future ways of working

The dramatic changes we continue to see in society generally through technological disruption, increased global connectedness, demographic shifts, and increased focus on the environment are also manifest in the world of work globally. The impetus for change may emerge from individual preferences or from company leadership, or both.

Organisational and workplace transformation may arise through the re-configuration of operational structures to accommodate distributed teams, partnering, flexible working; human resource development initiatives; corporate social responsibility (CSR) strategies; workplace productivity initiatives; and workplace design etc. More empowered individuals are also seeking more bespoke working arrangements and career pathways.

Research undertaken by PwC has identified a range of new and emerging characteristics across a diversity of company forms in a global context<sup>140</sup>. The analysis shows that companies will evolve and respond differently depending on their scale, corporate culture and core principles. It is not a 'one size fits all' and the reality is that companies will likely adopt a combination of approaches to achieve certain outcomes. A common denominator and challenge for most companies is maintaining a competitive edge in sourcing and retaining the right talent. This increasingly involves balancing evolving company requirements with evolving individual needs. Some of the emerging characteristics within firms globally identified in the PwC analysis include:

- maximum operational flexibility, lean staffing models, flexible working;
- use of telepresence and virtual solutions, including home working and teleworking;
- diversity and work-life balance becoming sources of competitive advantage;
- more intrusive monitoring and screening of individual performance;
- driving and supporting idea generation – seeding venture funds, incubators etc.;
- recruitment as a sourcing and contract management function;
- individuals identifying with a particular skill/professional network rather than with a single company; and
- elevation of a broader set of company objectives: environmental, health & well-being, professional development, community engagement.

Another aspect of future workplaces will be the emergence of new types of jobs or occupations. Analysis undertaken by Forbes highlights 10 jobs that didn't exist a decade ago, including for example; 'social media manager', 'chief listening officer', 'user experience design' and 'sustainability expert'<sup>141</sup>.

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140 The Future of Work – A Journey to 2022, PwC, 2014, [www.pwc.com/humancapital](http://www.pwc.com/humancapital)

141 10 Jobs That Didn't Exist 10 Years Ago, Casserly, M., Forbes, 2012, available at <http://www.forbes.com/sites/meghancasserly/2012/05/11/10-jobs-that-didnt-exist-10-years-ago/>

From the individual's perspective two competing tendencies are observable in relation to new ways of working. On the one hand, there have never been so many different types of work, professions, entrepreneurial and flexible working options available; while on the other, never before have workers experienced as much insecurity about work and the value of their (permanent) jobs<sup>142</sup>.

The individual of course is playing a key role in driving change. For many, concerns about working values, ethics and the need to create meaning are shifting to the centre, and seen as more important than the working environment, working time, function, activity and/or even salary. In this context, CVs may be less 'linear', positions in companies may change and the notion of employees wishing to climb down as well as up the career ladder can be a real possibility<sup>143</sup>. The shift in emphasis from work as something an individual does rather than the place they go to offers new possibilities for regional and more remote communities.

There are also ramifications for how individuals learn and shape their career pathways in response to the opportunities available, which in turn will make new demands on how education and learning are delivered within and outside the workplace. The traditional view of the third level degree as the optimal route to a job/career will in time give way to a more diverse set of pathways that involve more fragmented but continued engagement with the education system throughout an individual's career as individuals self-regulate their own professional development.

In summary, just as companies are evolving and responding differentially, individual employees have varied expectations and desires for their working lives. A variety of working cultures exist in reality, and sometimes within the same company. This can lead to confusion and occasional conflict, depending on the company's overriding culture and operational configuration, which may also be in flux.

### Key policy considerations for Ireland

Enterprise policy has an important role in ensuring that businesses of all sizes and individuals can capture the benefits from new ways of working and workplace innovation. Equally, the policy system must ensure that the quality of working life for the individual is enhanced and protected. Some debate remains as to the benefits or otherwise of certain emerging workplace configurations and new forms of work. What is becoming increasingly evident is that the policy frameworks surrounding the workplace, working patterns and modes of learning are being challenged by the pace of change.

The sections following and the strategic actions arising are informed by some of the key changes afoot in the world of work. Analysis undertaken for Enterprise Policy 2025 also points to

"More and more people are attracted by the 'entrepreneur of life' concept, actively controlling one's own work biography and assuming personal responsibility. Many employees are not put off by a future without a traditional full-time job, and even relish the thought. The underlying attraction is freedom and individuality"

Future Jobs: How We Will Work in the Europe of the Future, Adecco Group, 2010

142 Future Jobs: How We Will Work in the Europe of the Future – working world 2020 a qualitative study of trends in cooperation with the Zukunftsinstitut [Future Institute], Adecco Group, 2010

143 Ibid

a dearth of evidence based research in this area that could better inform future policies in education, industrial relations, employment regulation and workplace innovation. Research undertaken for the National Centre for Partnership and Performance by the ESRI (National Workplace Surveys, 2009) published in 2010 provides some indications of a changing environment<sup>144</sup>; however the survey results have dated considerably given the pace of change. A study into the prevalence and impact of low and zero hours contracts has been commissioned by Minister Nash and will report later in 2015. A more comprehensive analysis and ongoing data collection is required however.

	Future ways of working	
	Develop new partnership approaches at enterprise level, based on industrial relations that encourage participative approaches to securing the sustainability of the business and that provides for continuous learning and upskilling for workers to respond to the competitive demands to increase productivity and adaptability.	DJEI, DES
	Ensure that in the context of future ways of working our employment legislation and labour relations architecture remains fit for purpose and is grounded on evidence-based research and data collection on new forms of work, workplace innovation, workplace learning etc., and takes account of the impacts on individuals and enterprises and of the policy implications arising.	DJEI

## Skills development - meeting enterprise needs

The availability of the right skills is a key enabler of enterprise performance and growth. There has been significant continuing reform in the education and training sector in recent years which is aimed at ensuring the availability of high quality skills at all levels and enhanced employability of individuals. Stronger alignment has been achieved between mainstream education and the skills needs of the Irish economy informed by ongoing research and monitoring by the Expert Group on Future Skill Needs (EGFSN) and implementation of initiatives such as the ICT Skills Action Plan. Between 2008 and 2013, there has been a 50 percent increase in annual graduate output on ICT programmes from the higher education system and the initiative is aimed at achieving an ambitious target of meeting 74 percent of demand through domestic supply by 2018.

A key principle over the coming years that will guide further reforms in the context of the forthcoming NSS will be a deeper level of engagement between the education and training system and employers at a national and regional level<sup>145</sup>. In the context of a rapidly changing world of work this is has never been as important. Critical aspects of this engagement include: employer input to the development of education and training provision; creating sufficient and

144 The Changing Workplace: A Survey of Employees Views and Experiences, ESRI in conjunction with National Centre for Partnership and Performance, 2010

145 See also Section C – Differentiators: Innovativeness, under enterprise objectives and challenges, which highlights in particular the importance of collaboration between the higher education system and enterprises in fostering innovativeness within enterprise, including increased mobility of personnel between industry and academia

sustainable work placement opportunities; and the development of apprenticeships and traineeships in new economic sectors.

### Work readiness for a changing environment

Although education and training delivers many learning outcomes, a key concern for the enterprise sector is the 'work readiness' of individuals who emerge from education and training at whatever level. There are two ever changing dimensions to this concept. The first relates to the core technical business or vocational competencies and qualifications acquired for the occupation. The second dimension is less easy to define yet is equally as important in the evolving world of work. It relates to what the Higher Education Strategy refers to as a 'deeper and broader disciplinary foundation'<sup>146</sup>, typically a variety of higher order skills that can meet and engage with an evolving work context<sup>147</sup>.

The National Employer Survey<sup>148</sup> explored employer levels of satisfaction with various attributes of recently recruited graduates in 2014. In general there was a high level of satisfaction amongst employers (particularly larger and/or foreign owned respondent employers) across a range of personal and workplace attributes of their graduate employees. A number of areas emerged with relatively lower levels of satisfaction however, including: foreign language capability, entrepreneurial skills and business acumen/awareness. Effective written communication and working effectively on their own also exhibited relatively lower levels of overall satisfaction than areas such as verbal communication and level of technical knowledge which emerged with very high levels of satisfaction amongst employers<sup>149</sup>.

Employers also pointed to skills required in their organisations that they considered were not adequately provided for through the education system, including soft skills transferrable to the working environment, practical workplace experience, problem solving, analytical skills and data analysis, entrepreneurial spirit, foreign language proficiency and good presentation skills<sup>150</sup>.

The work places of the future will be different to today and the following aspects will set new challenges and opportunities for individuals over the course of their career development pathways, requiring a broad range of technical and non-technical competences including those already flagged by employers above. Our analysis of future ways of working has highlighted the following areas in particular:

- **Digitisation:** A previous chapter has highlighted the pervasive impact of digitisation in the economy and society and how ICT continues to transform work processes, operational structures (e.g. distributed teams) and forms of work. It is also transforming the world of learning where for example MOOCs (Massive Open Online Courses) have gained traction. Digital competence (incl. media and information literacy) is becoming firmly established

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146 National Strategy for Higher Education: Report of the Strategy Group, 2011

147 Such as such as flexibility, entrepreneurship, willingness and ability to adapt, problem solving, analytical skills, conflict management, interrelation skills

148 The National Employer Survey: employers' views on Irish further and higher education and training outcomes, commissioned by the Higher Education Authority, SOLAS and Quality and Qualifications Ireland, was published in May 2015

149 Ibid

150 Ibid p34



as a key transversal competence and needs to be an essential element in learning through from schools to adult learning.

- **Higher order skills:** Increasingly employees need to present an extended set of competencies in addition to core technical qualifications. So-called ‘meta-qualifications’ or ‘higher-order’ skills such as flexibility, entrepreneurship, willingness and ability to adapt, problem solving, conflict management, interrelation skills and others will be key requirements for occupations across all skill levels<sup>151</sup>. This has significant implications for teaching and learning within the educational system<sup>152</sup> and underlines the importance of ongoing curriculum reform in Ireland (for example the Junior Cycle Framework)<sup>153</sup>.
- **Workplace learning:** Maintaining a competitive edge in the world of business requires agility and responsiveness and capacity to innovate. There is increased expectation for individual employees to contribute to this in a win-win context. Engagement with workplace innovation and transformational change initiatives<sup>154</sup> involves a necessary re-engagement with learning for many employees in a context of mutual trust with employers. There is a need for increased investment by employers in training following the significant cutbacks during the recession.
- **Emerging forms of work,** including portfolio working (contract based, multiple clients), casual and low hours contracts, distributed ICT based mobile working, see more and more individuals gaining employment outside the formality of a traditional workplace and potentially outside of previously available HR and training supports, self-managing a diverse career portfolio. Judicious and timely engagement with education and upskilling opportunities will be critical for career advancement. Individuals need to be equipped with the wherewithal to re-engage regularly with education and training, while education provision will need to be positioned to deliver across a variety of modes of learning and at flexible times throughout the calendar (as opposed to the academic year).
- **Exploiting alternative career and education pathways:** Many alternative pathways exist for people to progress through education and through their careers. Such flexibility is becoming increasingly important to provide the skills for a diverse and productive enterprise base and for individuals to progress in their chosen careers. It is important that attitudes and perceptions change that value one path over another, and equally it is critical that there are clear and consistent routes of access, progression and transfer between various elements of the education system (including second level, apprenticeships, further education and training, third level and continuous professional development (CPD).

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151 Future Jobs: How We Will Work in the Europe of the Future – working world 2020 a qualitative study of trends in cooperation with the Zukunftsinstitut [Future Institute], Adecco Group, 2010

152 Analysing and Designing Learning Environments for the 21st Century, Dumont, H. and Instance, 2010 in Dumont, H., Instance, D. and Benavides, F. , The Nature of Learning: Using Research to Inspire Practice, OECD, Paris, 2010 p. 20

153 Advancing learning, assessment and evaluation in Irish second-level schools, Hislop, Dr. Harold, Chief Inspector, Department of Education and Skills; address to Association of Community and Comprehensive Schools Annual Convention, 2015

154 For example Lean

- **Leadership and management capability:** New forms of work organisation often across international boundaries, greater levels of individual empowerment and expectation, the constant need for innovation, and other changes demand high levels of management competence for which many even experienced managers are ill-equipped. Re-engagement with relevant training and education will be crucial to maintain business performance, facilitated by enhanced access to CPD provision.
- **Hollowing out:** Technological change and progressive digitisation in particular is a powerful enabler of new ways of working and more flexible work practices. It is also contributing to other changes in the world of work. Significant job polarisation, or a 'hollowing out', is now in evidence in advanced economies, where technology and computing power has replaced routine tasks that are easily programmable<sup>155</sup>. The jobs affected are more likely to exist in the middle of the job distribution<sup>156</sup> and present a considerable challenge to the individuals affected who may become unemployed, and or require reskilling or upskilling.

Progress is being made in a number of these areas through the implementation of the Strategy for Higher Education and the Further Education and Training Strategy, new apprenticeships and traineeships, and continued reforms at primary and secondary level. These include:

- the development of a Digital Strategy for Schools<sup>157</sup>;
- reform of the Junior Certificate;
- the forthcoming Foreign Languages Strategy; and
- the National Forum for Teaching and Learning<sup>158</sup>.

The forthcoming NSS provides an opportunity for a consistent and integrated approach overall that will better prepare individuals for new dynamics in the world of work. It is also the case that enterprise has a responsibility to provide on-the-job training for new entrants at all skills levels and can play a stronger role in the development of skills and competences for the evolving workplace.

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155 In Ireland, the hollowing out phenomenon was somewhat masked through the boom years, where construction activity in particular drove employment and wage increases for those in middle paying occupations. However, the advent of the recession has revealed the longer-term underlying polarising trend, see The Irish labour market since the recession: lifting the veil on long term trends, Rory O'Farrell, NERI WP 2013/No 11

156 Hollowing out and the future of the labour market, BIS Research Paper Number 134, October 2013

157 Digital Strategy for Schools 2015-2020: enhancing teaching, learning and assessment, Department of Education and Skills, October 2015

158 See the Forum's recent publication, Roadmap for Enhancement in a Digital World, 2015-2017, National Forum for Teaching and Learning in Higher Education, 2015

### Enterprise and education engagement

The necessity for ongoing engagement between the education system and the enterprise sector is recognised across the different segments of Ireland's education system and the enterprise sector itself<sup>159</sup>. This is reflected in the Strategy for Higher Education, the Further Education and Training Strategy, Quality and Qualifications Ireland (QQI), and the establishment of the Apprenticeship Council. Both the QQI and the HEA have developed strategies for enterprise engagement, which involves substantial input and collaboration with enterprise, the enterprise development agencies and others across a wide range of areas. The Department of Education and Skills operates an employer engagement forum.

In addition to the above, the Department of Education and Skills is currently in the process of rolling out further education and higher education Regional Skills Fora where the objective is to foster better engagement between education and training providers (universities, Institutes of Technology, Education and Training Boards, and Skillnets) and employers, and including other regional stakeholders in building skills within the regions. The Fora will provide a structure for employers and the further education and training and higher education systems to work together with other local stakeholders and will help employers better understand and access the full range of services available across the education and training system and from other public bodies. It will provide a mechanism where employers can have a greater input into the planning, development and delivery of existing and new programmes and propose revisions that address their skills needs. It is also envisaged that the new regional fora will enhance links between the education providers and inform national funding decisions.

It is apparent that there are a number of simultaneous initiatives in progress in relation to education and enterprise engagement which is an important step forward in this regard. Further work needs to be done to address engagement at 2nd level to enhance the quality and skill level of students entering 3rd level, particularly in STEM, digital learning and practical IT skills development. The forthcoming preparation of the NSS presents an opportunity to take an overarching view of different approaches emerging and to set out a clear programme of action over the coming years.

### Skills in high demand

A number of areas of skills demand have been articulated by industry across all sectors which have been captured in various EGFSN reports. These include;

- high level ICT skills;
- data analytics/Data savvy skills;
- skills for international trade - including foreign languages and international sales;
- entrepreneurial skills; and
- skills for creativity and design.

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159 Employers have signalled that they could do more in this regard, through for example, constructive feedback on graduates to HEIs, upskilling career guidance, secondment of lecturers to industry, up-skill lecturers with live working experience, practical components to courses etc. The National Employer Survey: employers' views on Irish further and higher education and training outcomes, commissioned by the Higher Education Authority, SOLAS and Quality and Qualifications Ireland, 2015

Cross-enterprise skills particularly in the areas of entrepreneurship, creativity and design will need increased attention as embedded elements within existing and emerging education programmes.

The Government's ICT Action Plan launched in 2012 and renewed in 2014 to cover the period to 2018 is aimed at ensuring that employers will be able to source their high level ICT skills needs in Ireland, through a mixture of domestic supply and skilled inward migration (both from within the EU and through the employment permit system) with a target 74 percent national supply by 2018<sup>160</sup>. Significant progress has been made based on this focused and collaborative approach. Targeted upskilling also forms a key part of the education and training system's response to ICT skills needs. A key goal is to enhance awareness of ICT careers to prospective students.

Elsewhere, specific shortages arise at a sectoral and occupational level and the EGFSN continues to monitor these emerging the skills gaps. This involves in-depth consultation with enterprise and education and training providers, and combined with economic data and national trends and projections, a modelling exercise is conducted to estimate the future skills demand. As Ireland emerges from the recession, shortages are increasing in a greater number of occupations and sectors, e.g. chemical and biological scientists, biochemists, biotechnology technicians, production and process engineering, product development and design engineering, chemical engineering, risk and compliance skills in the business and financial sectors, quantity surveyors and building information modelling skills in construction, and welders and tool-making skills in the craft occupations. These are skills that are critical to the development of a company or sector and may be quite small in quantity.

Significant replacement demand arises in employment intensive sectors across manufacturing and locally traded services that can experience high employee turnover, such as hospitality, retail and transport and logistics. These will require responses from the FET and HE systems and enterprises, and need to be continually monitored<sup>161</sup>.

The education system as a whole contributes to the pipeline of skills development across the continuum from primary through to third level and beyond.

### Workplace learning

In addition to ensuring further alignment of skills needs between the education system and enterprise, there will be a continuing emphasis on lifelong learning and upskilling within the workforce.

As pointed to previously, employees in all jobs will increasingly be required to acquire a range of generic and transferable skills including people-related and conceptual/thinking skills. There is an on-going shift from routine intensive work to 'creative-intensive' work, with a requirement for flexibility, continuous learning, and individual initiative and judgement.

By international standards, Ireland ranks relatively low with regard to participation in lifelong learning<sup>162</sup>. In 2014, according to Eurostat labour force survey data, the lifelong learning

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160 Other initiatives such as Enterprise Ireland's 'IT's happening here' website are have a role to play; [www.itshappeninghere.ie](http://www.itshappeninghere.ie)

161 Other issues such as salary rates, terms and conditions, and career pathways, which may contribute to high levels of turnover in these sectors will require a response from enterprise

162 Lifelong learning refers to persons aged 25 to 64 who stated that they received education or training in the four weeks preceding the survey.

participation rate in Ireland was 6.7 percent compared to 10.7 percent in the EU-28 and 15.8 percent in the UK and far behind leading countries such as Denmark (31.7 percent), Sweden (28.9 percent) and Finland (25.1 percent). It is also the case that those participating in Ireland are predominantly in employment and have higher levels of education<sup>163</sup>.

Expenditure by employers on training has remained relatively static over the years. Amongst Agency-supported firms, expenditure on training as a percentage of sales accounted for one percent in 2013 and has not increased beyond a peak of 1.3 percent in 2000<sup>164</sup>.

Participation in education and training has an unambiguously positive impact on earnings for employees, firms and the economy in general. There are challenges in incentivising increases in investment and participation in workplace learning. For many small firms in particular, there is heightened risk that the benefits of training expenditure may not accrue to the employer as employees may leave after the training has taken place. This is especially pertinent in sectors with high levels of employee turnover. In addition, low skilled and older workers are less likely to receive upskilling from their employers, yet this cohort is perhaps the most vulnerable to ongoing changes within the workplace. The State also clearly has an interest in upskilling those in employment as the economic costs of losing people from the workforce exceed that of keeping them in employment.

Although the ongoing policy focus in terms of education and training for those in the labour market has understandably been on the unemployed, as employment begins to recover in the economy it is important not to lose sight of how to support re-skilling and upskilling of those within the workforce in order to assist the sustainability of the recovery. Encouraging employers to engage in National Framework of Qualifications (NFQ) accredited programmes where possible when investing in education and training can help employees gain nationally recognised, competency-based qualifications. In addition, the State could have a role in facilitating wider use of Recognition of Prior Learning (RPL) so that employees can attach formal educational value to their life and work experience. This may be particularly useful for older workers with low levels of formal educational attainment. The action in the Further Education and Training Strategy 2014-2019 to develop and roll out an employee development strategy (to be implemented in 2016) is to be welcomed. It is important that the forthcoming NSS maintains workplace learning as a key policy focus for the future and considers means by which increased investment and participation in workplace learning can be achieved.

Campus-based delivery continues to be the dominant mode of education delivery which brings with it a certain level of inflexibility, particularly for working individuals. Consideration must also be given to greater deployment of different modes of education delivery including fully on-line learning, particularly for taught masters or shorter CPD programmes offered by universities or professional bodies. Issues such as accreditation and recognition will need to be addressed.

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163 Analysis shows that of the 181,000 that engaged in lifelong learning in Q4 2014, those participating were more likely to be in employment (57 percent were in employment) and more likely to be higher skilled (60 percent had third level education or above, 32 percent PLC/Leaving Certificate and just 6 percent of those participating had lower secondary education and below), Lifelong Learning among Adults in Ireland, Q4 2014, April 2015

164 DJEI Annual Business Survey of Economic Impact (ABSEI), various years

Education and training for the 21st century		
<p>Develop a National Skills Strategy to ensure alignment between the future skills needs of the workplace and the education system, so that individuals progressing from our education and training systems are equipped to adapt to the work environment of the future, taking into consideration the following areas in particular:</p> <ul style="list-style-type: none"> <li>▪ higher order skills, attuned to the increased need for strategic and creative capabilities, and project and risk management capabilities to manage in uncertain and more complex working environments;</li> <li>▪ integration and clear career progression through the education and training system - promoting alternative pathways and recognition of prior learning and experience so as to progress along the qualifications ladder; and</li> <li>▪ developing alternative modes of delivery including online offerings, an integrated digital-enabled system, and a wider range of accreditation of learning in particular for the workplace setting.</li> </ul>	DES	
<p>Double investment and participation in workplace learning and development by enterprises over the period to 2020.</p>	DJEI, DES, Agencies	
<p>Launch regional skills fora being developed under the DES, to facilitate employer engagement with the education and training system at all levels to enable local delivery of skills needs identified in the regional context.</p>	DES	
<p>Strengthen the mechanisms and metrics for ensuring delivery on the skills needs identified at sectoral and occupational level through the Expert Group on Future Skills Needs and SOLAS and develop further the communications mechanisms between the EGFSN and higher education and further education and training institutions to respond to identified shortages.</p>	DJEI, DES	
<p>Develop the new apprenticeship system on an ongoing basis to cover the broad range of skills needed for the economy to ensure the system is resourced to adapt to the changing needs of the workplace and employers over the coming decade.</p>	DES	

## Leadership and management development

Research undertaken by the Management Development Council (MDC) demonstrated that enterprise performance improves as a result of participation in management development primarily through the adoption of more efficient management practices, both in terms of time savings, as well as efficiency gains achieved through the diffusion of better practice and increased levels of innovation throughout all levels of a firm<sup>165</sup>. There is a heightened focus on

<sup>165</sup> Management Matters in Northern Ireland and the Republic of Ireland, McKinsey & Co. and Forfás, 2009

the importance of leadership and management in the context of increasing complexity within the work environment, including for example; how businesses are structured across international boundaries; more empowered and internationally mobile individuals seeking bespoke working arrangements; the innovation imperative; and the necessity to transform and change whole organisations in response to shifting business conditions and strategy.

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 base.

Evidence from evaluations of capability and management development programmes for agency-supported companies undertaken by DJEI found not only positive impact in relation to sales and employment growth by firms participating in management development programmes but also significant behavioural impacts with regard to raising the strategic ambition of the enterprise, increased resilience and ability to weather the recession. Firms also reported significant benefits from participation such as peer learning.

Some progress has been made recently with regard to measures aiming to increase participation in management development. For example, the ManagementWorks Skillnet was established under the Government’s Action Plan for Jobs 2012 and provides a range of programmes targeted at SMEs. In addition, Enterprise Ireland has also extended and refined its management development offerings available to its client base, particularly with regard to its longer-form leadership programmes. Local Enterprise Offices also offer a six to nine month *Accelerate* management development programme covering a variety of management modules, coupled with mentoring support.

Given the demonstrated correlation between management development and bottom line performance, a step-change drive to increase participation in management development needs to be a primary focus of support for enterprise.

	<b>Deliver a demonstrable uplift in leadership and management capability across the enterprise base</b>	
	Achieve a demonstrable uplift in business leadership skills to drive innovation and internationalisation across a broader cohort of enterprises, and in management capability across the enterprise base, so that all firms have the potential to achieve a one-step-up to higher business performance and growth, using the most appropriate intervention to deliver to the specific needs of the enterprise, scale and stage of development.	DJEI, DES, EI, IDA, LEOs

## Attracting and retaining talent

Developing our own talent will always provide the vast bulk of our skills requirements and it is critical that there is sustained focus in this area. However, the reality is that there will be a requirement for enterprises in Ireland to source talent from overseas. Globalised companies expect to draw from a global talent pool. There will be many and varied instances of this, for example; to address specific technical capability gaps; to get a new investment project up and running; to bring specific partners on board a start-up venture or research and development initiative. Some of these individuals will play a key role in the growth and development of enterprises in Ireland, leading teams of graduates and those with less experience that go on to



provide employment opportunities for others, and/or building capability in our innovation system. There is also a considerable benefit to be gained from attracting overseas entrepreneurs to grow their start-ups from Ireland.

We need also to be cognisant that global competition for talent means that we also risk losing talent to other countries. Some of this is inevitable, but as has been previously demonstrated, sometimes sees the returned emigrant bringing back new skills and capabilities to the Irish economy. We also risk losing immigrants who have taken the important steps on their career or education ladder in Ireland some of whom could and would like to contribute more in Ireland.

Ensuring that Ireland has an adequate supply of talent to meet the needs of all firms involves ensuring that Ireland is attractive place to live, to be educated, to achieve scientific excellence and to develop a business. We need to consider that attracting a key individual from abroad and ensuring that talent is retained in Ireland also involves broader quality of life considerations, including access to quality education provision, leisure and recreational facilities, costs of living etc. There is already free movement of people within the European Economic Area; for areas outside of this, a robust and efficient permit and visa system is an important factor in ensuring access to required talent<sup>166</sup>.

In addition, quality, affordable and accessible childcare is important to facilitate labour market participation, particularly among mothers. The report of the IDC working group convened by the Department of Children and Youth Affairs is directly relevant that sets out policy options and recommendations that are currently being considered by government<sup>167</sup>.

In Section C – Differentiators: Place making - we outline the criticality of creating places that are attractive for people to live and work and for businesses to invest. The further development of our national innovation system is also discussed in Section C – Differentiators: Innovativeness. The new Strategy for Science, Technology and Innovation will have a key role to play in reinforcing the supply of highly skilled individuals with research and technical competence and the development and management of researcher careers in Ireland.

Section E – Excelling in getting the basics right: Taxation policy - highlights aspects of our personal taxation system and the tax treatment and incentives around entrepreneurship that can be a game-changer for individuals considering alternative locations for career progression or growing their start-up companies.

### Employment permits

A targeted and user friendly Employment Permit system which complements the initiatives underway in the Education and Training sectors is an important lever in addressing skills gaps and ensuring that talent is attracted to Ireland from non-EEA sources. Ireland operates a managed employment permits regime for the hiring of non-EEA nationals in response to employer demands, when specific skills prove difficult to source within the EEA. The Irish permits

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166 The European Economic Area (EEA) is a single market that provides for the free movement of persons, goods, services and capital through three of the four Member States of the European Free Trade Association (EFTA) – Iceland, Liechtenstein and Norway – and all 28 Member States of the European Union (EU)

167 Report of the Inter-Departmental Working Group – Future Investment in Childcare in Ireland, Options and Recommendations for Government, Department of Children and Youth Affairs, July 2015



system focuses on key sectors and skills shortages, especially where there is potential for jobs growth and such hiring makes a positive net contribution to the Irish economy<sup>168</sup>. The identification of occupations and areas of skills shortages draws on research and data published by the EGFSN and the National Skills Database managed by SOLAS.

The Employment Permits (Amendment) Act 2014, which commenced in October 2014, introduced nine new categories of employment permit, as well as making a range of other changes to develop the effectiveness of the employment permits regime. There is a focus in the new Act on the particular needs of start-up companies, which are provided with a range of waivers to some of the rules normally applying to permit applicants. Measures are also being taken to streamline application processes across employment permits and visas, including the development of an online system and introduction of a 'Trusted Partner' registration scheme

DJEI is committed to address skills deficits in Ireland's ICT capacity in particular; including issuance of circa 2,000 permits per annum in ICT occupations in critically short supply.

All employees in Ireland, including holders of employment permits, are protected by a suite of employment rights, and the potential for exploitation or fraud, risks inherent in any migration programme, is closely monitored.

## Effective employment regulation and ensuring work pays

A well-functioning, robust and proportionate regulatory environment is a fundamental part of Ireland's competitive offering and this extends into the area of employment regulation. The key objective in a successful employment regulatory framework is striking the right balance between protecting the quality of the working life for individual workers while at the same time ensuring optimum labour market responsiveness and flexibility, the fruits of which can create a virtuous cycle for both employers and workers.

In the case of employment, the regulatory functions are discharged by specialist bodies with expertise in their respective fields. These bodies are established as Offices and Agencies of the Department, and include the National Employment Rights Authority (NERA), the Employment Appeals Tribunal (EAT), the Labour Relations Commission (LRC), the Labour Court, the Equality Tribunal, and the Health and Safety Authority (HSA).

### Industrial relations and employment rights legislation

#### Industrial relations

Good workplace relations are a cornerstone of productive, innovative and growing enterprises. The system of industrial relations in Ireland is essentially voluntarist in nature with the terms and conditions of employment of workers being determined in the main by a process of voluntary negotiation and agreement without the direct intervention of the State. In general, Irish law does not try to impose a solution on parties to an industrial relations dispute, but rather is

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<sup>168</sup> The permits system is oriented by a Highly Skilled Eligible Occupations and Ineligible Occupations for an Employment Permit list, which is regularly reviewed in line with analysis undertaken by the EGFSN and SOLAS. It incorporates a Labour Market Needs Test and a requirement that any employer availing of the system must be employing at least 50 percent EEA nationals before a permit may be granted.

designed to help support the parties in resolving their differences. The State takes a supportive role, by providing a framework and institutions through which good industrial relations can prosper, rather than an interventionist one.

This system has been effective in ensuring that workers interests are protected while also allowing employers respond quickly to changing economic and market circumstances.

The Workplace Relations Act has reformed significantly the State's workplace relations structures and procedures. This is intended to:

- deliver a world-class workplace relations service which is simple to use, independent, effective, impartial and cost-effective;
- provide for workable means of redress and enforcement within a reasonable period; and
- reduce costs significantly.

The reforms are underpinned by a core two-tier structure, comprising a new single body of first instance, the Workplace Relations Commission, and a separate appeals body, which is an expanded Labour Court. From an employer and worker perspective the reforms have simplified the structure considerably and will reduce administrative, legal and the opportunity costs involved in progressing industrial relations or employment rights matters.

#### **Registered employment agreements/sectoral employment orders**

2015 has seen the reintroduction of a mechanism for the registration of employment agreements (REAs) between an employer or employers and trade unions. These REAs will govern remuneration and conditions of employment agreed in individual enterprises. A new statutory framework for establishing minimum rates of remuneration as well as terms and conditions of employment for a specified type, class or group of workers, across a sector is also being introduced. This is particularly important in the context of transnational provision of services and promoting harmonious relations between workers and employers.

Both employers and workers see strong value in both these frameworks as they provide certainty around wage costs, wage earnings and industrial peace for the period covered by the Agreement or Order as the case may be.

#### **Employment rights**

High standards of employment rights help to contribute to an environment which encourages sustainable economic growth and the creation of sustainable quality jobs. In the context of the economic crisis, the Government has sought to ensure that there is no diminution of the high standards of employment rights provided for in our existing body of labour law and continued its focus on enhancing the existing body of employment rights. A well-resourced and proactive labour inspectorate is in place, which plays a critical role in disseminating information to employers and employees alike and also in ensuring compliance with employment rights legislation. This latter role is critically important in ensuring a level playing field and protecting responsible and compliant enterprises from any unscrupulous employers that might wish to undercut legitimate businesses through unfair competition.

A key strategic goal will be continuing to strike the right balance between the need to ensure that regulation of employment rights in the workplace is sufficiently flexible and adaptable to the needs of enterprise and the broader economy, while maintaining and enhancing where possible the security that employees seek in their terms and conditions of employment. This goal arises at EU level as well as at the national level.

Transformation in the workplace and new ways of working will present new challenges over the medium term, including the use of atypical forms of employment contracts, such as zero and low hours contracts, the emergence of flexible 'self-employed' arrangements in particular sectors and the need for review of key elements of EU employment law to take account of rapidly changing developments in work organisation and society.

As part of its response, DJEI has commissioned the University of Limerick to conduct a study into the prevalence of zero and low hours contracts and their impact on employees, to enable the Minister to make any evidence-based policy recommendations to Government which are considered necessary on foot of the study.

A key challenge will be to monitor developments in a perpetually changing world of work to ensure that workers continue to be adequately protected as employment relationships evolve, while also ensuring our business models can adapt to change and remain competitive.

**The Low Pay Commission**

The recently established Low Pay Commission, on an annual basis, examines and makes recommendations to the Minister of the day on the national minimum wage, with a view to securing that the national minimum wage, where adjusted, is adjusted incrementally having had regard to changes in earnings, productivity, overall competitiveness and the likely impact any adjustment will have on employment and unemployment levels.

In discharging its functions, the Commission is required to ensure that any advice or recommendations it makes to Government is evidence-based; utilising agreed data, carrying out research and consultations with employers, workers and their representatives, and taking written and oral evidence from a wide range of organisations.

**Health and safety in the workplace**

Good health and safety practice makes good business sense, aids competitiveness, improves relations with workers and is in fact, central to successful enterprise. Many businesses in Ireland, both indigenous and multinational, are placing best practice in health and safety at the centre of their enterprise strategy. The Health and Safety Authority continuously seeks to identify new technologies, industries and ways of working so as to effectively address emerging risks in Irish workplaces. The HSA's well-targeted and risk-based regulatory activities are consistent with the Government's commitment to reduce the regulatory and administrative burden on business.

	<b>Employment regulation</b>	
	<p>Ensure the Workplace Relations Commission can respond to the changing needs of the workplace, employees and employers over the next decade.</p> <p>A continued focus on:</p> <ul style="list-style-type: none"> <li>▪ ensuring that the statutory wage setting mechanisms remain responsive, flexible, fair, and fit for purpose; and</li> <li>▪ engaging proactively with EU initiatives and EU employment law to ensure that the EU legislative framework takes account of changes in work organisation and the evolving needs of the Irish economy.</li> </ul> <p>Review and update employment legislation and ensure it is fit for purpose for the coming decades.</p>	<p>DJEI</p>

## Enhancing the employment prospects of the unemployed

The key challenge of stimulating employment growth in the wake of the recession has been accompanied by another, that of ensuring that as many as possible of the emerging job opportunities are filled by people from the Live Register. Recent figures relating to employment and unemployment are indicating significant improvement, with the unemployment rate showing consistent downward movement and the number of people who have been on the Live Register for more than one year is continuing to fall<sup>169</sup>.

Looking out over the coming decade, a return to sustainable economic growth and job creation will lessen the unemployment challenge considerably. There is no room for complacency however. Unemployment still remains at an unacceptably high level. Furthermore, the experience of past recessions shows that young unemployed people and people who are long-term unemployed can find it harder than others to gain employment<sup>170</sup>. At individual level, long spells of unemployment can affect employability through loss of workplace skills, confidence and motivation, potentially making it more difficult for some people to re-enter the market.

Other challenges are also emerging, such as the potential for increased 'hollowing out' of the labour market, particularly as more routine tasks are automated and certain skill sets are no longer in demand. There is evidence of a skills mismatch in the Irish context in relation to the proportion of the workforce that are tertiary educated and the proportion of the employment that is highly skilled (an over education tendency in Ireland's case)<sup>171</sup>.

A major issue as the economy has entered recovery has been that many unemployed workers, particularly those who are long-term unemployed (LTU), are not adequately equipped to work in those sectors most likely to experience employment growth. Skills can become less relevant or obsolete the longer people remain unemployed and people can fall out of the labour market completely<sup>172</sup>.

The Government launched Pathways to Work (PTW) in 2012, a four-year strategy designed to reverse the dramatic rise in the numbers of unemployed jobseekers on the Live Register. PTW represented a comprehensive reform of the State's approach to helping unemployed jobseekers return to work. Some of the key interventions in PTW have been focused around enhancing the employability of individuals, and bringing people closer to the labour market and its specific requirements - through programmes such as Momentum, Springboard (now in its fifth iteration), and JobBridge. The development of protocols between the Department of Social Protection (DSP), DJEI, IDA Ireland, Enterprise Ireland and the Local Enterprise Offices (LEOs) have also served to maximise the recruitment of appropriately skilled persons from the Live Register by enterprise agency client companies.

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169 The number of long term claimants (1yr+) on the Live Register in April 2015 was 158,488. There was an overall annual decrease of 19,737 (-11.1%) in the number of long term claimants, CSO Statistical Release, 29th April 2015

170 Pathways to Work 2015, Government of Ireland, 2015

171 The Human Capital Report 2015, World Economic Forum in collaboration with Mercer, 2015

172 The European Commission has noted that the slack ratio (the number of jobseekers divided by the number of employed people at a given level of skills) is much higher in Ireland for those with low levels of educational attainment than for those with higher levels of attainment. See European Commission, Reindustrialising Europe: Member States Competitiveness Report 2014, September 2014

Early intervention through the education system, such as DEIS (Delivering Equality of Opportunity in Schools) will continue to play an important role in reducing the risk of unemployment and long-term unemployment amongst children growing up in disadvantaged communities.

Under the latest revision of PTW, there is an increased focus on the long-term unemployed and youth unemployed. Amongst the targets in PTW 2015 are to move a further 15,000 LTU to employment by end of 2015. The plan also envisages making a range of SOLAS, ETB Further Education and Training and Higher Education programmes available to meet the needs of the LTU, making 57,000 places available across these providers.

The further education and training (FET) sector will continue to have a key role in addressing unemployment and ensuring individuals transition from education to employment. Although specifically developed in the context of the unemployment crisis, there are aspects of the Momentum programme that could be mainstreamed within the FET system, for example: the focus on areas of future skills demand; the link with employers; work placements; availability of shorter term programmes and stackable credits.

A greater focus on workforce development and upskilling generally will be a key requirement over coming years. Again there is an opportunity now to look at best practice aspects of recent labour activation measures. For example, the Springboard model of increased flexibility of engagement could be adopted more widely in the context of continuous professional development and life-long learning<sup>173</sup>.

	<b>Enhancing employment prospects</b>	
	Mainstream best practice from focused labour market activation programmes within the further education and training and higher education system such as Springboard and Momentum to provide skills in demand by employers, improve transitions from education to employment, and reduce the risk of unemployment.	DES, DSP

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173 To be considered eligible for approval, Springboard+ courses must seek to address an identified current or future skills need and include a precise labour market rationale

# Place-making

## Introduction

Place-making is the process of creating quality places that people want to live, work, play and learn in<sup>174</sup> - that is, creating a strong *sense of place*. It is a multi-faceted approach to the planning, design and management of public spaces. Place-making capitalises on a local community's assets, inspiration, and potential. It involves the full range of actors and contributors ranging from local authorities and urban planners, architects and engineers, businesses, infrastructure agencies, transport operators and the construction sector, to create conducive and attractive locations for investment and for people to live and work.

There is a strong interdependence between the planning, development and creation of an attractive environment and enterprise development. Companies are attracted to invest in locations where they can access skills, where people will want to live and work and where the surrounding infrastructures are supportive of business (including, for example, transport and broadband networks; education and training facilities etc.).

Establishing a strong sense of place contributes to the attractiveness factors for entrepreneurship, for business investment, for foreign direct investment (FDI), for talent and for tourism<sup>175</sup>.

Regions throughout Ireland have an important role to play in achieving national economic recovery and growth. Our aim over the next decade is that the enterprise development potential of each region will be realised, building on distinctive strengths, assets and attractiveness factors, that include natural heritage and culture as well as the quality of the regional business ecosystem.

This chapter sets out:

- a brief overview of regional policy in Ireland;
- regional employment trends;
- place-making in Ireland's regions - overarching considerations;
- realising regional potential - harnessing regional difference; and
- developing city regions throughout Ireland.

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174 Definition of Place-making: Four Different Types, Mark A Wyckoff, FAICP, MSU Land Policy Institute, 2014

175 Refer also to People, Place and Policy: Growing Tourism to 2015, Department of Transport, Tourism and Sport, 2015

## Regional policy in Ireland

Responsibility for regional development governance lies with the Department of Environment, Community and Local Government (DECLG). Since 2002, the National Spatial Strategy (NSS) has set the strategic context for spatial planning in Ireland by regional authorities in their Regional Planning Guidelines<sup>176</sup> (RPGs) roles, for planning authorities in their statutory planning functions, as well as influencing the National Development Plan (NDP) investment in transport, housing, water services and communications infrastructure. The NSS set out a blueprint for the co-ordinated development of nine gateway cities and towns and nine hub towns, together with complementary policies to activate the potential for lasting economic development in their hinterlands and wider regions.

Under the Local Government Reform Act 2014, new regional governance structures have been put in place. The NSS itself will be replaced by a National Planning Framework (NPF) to set out the overarching framework that will inform the strategic investments needed in order to realise the potential for growth throughout Ireland. Three Regional Assemblies have been established and the previous Regional Authority structure discontinued. The three Regional Assemblies are charged with developing Regional Spatial and Economic Strategies (RSES) for their territories, incorporating effective urban place-making and design. The RSESs will be informed by research and analysis undertaken at sub-regional level (Strategic Planning Areas)<sup>177</sup>, with the future potential of enterprise in these areas throughout Ireland (and the identification of enterprise needs) playing a key role.

The formulation of RSES is an important element of the stronger role of local government in economic development under the local government reform programme<sup>178</sup> and given statutory effect through the Local Government Reform Act 2014. That role will be supported by the participation of relevant agencies.

At local level, Local Economic and Community Plans are also being developed which will provide a framework for the performance of a stronger and clearer economic development role by the local authorities. The establishment of the Local Enterprise Offices (LEOs) is key in this regard. The LEOs aim to capitalise on the economic potential of local strengths and assets, through collaboration with relevant agencies. Regional economic priorities will, in future, be informed by the overarching RSESs.

The fundamental concepts contained within the original NSS around prioritisation, critical mass and delivering on the potential of a region remain valid today.

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176 The current Regional Planning Guidelines run for the period to 2020 and include an economic development dimension as well as spatial planning. The economic development elements were informed by the Regional Competitiveness Agendas for each NUTs III region published by Forfás, December 2009

177 Titled Strategic Planning Areas in the Regional Assemblies Establishment Order 2014, these approximate to the NUTS III – the 8 areas are the Border and West (in the Northern and Western region); South East, South West and Mid-West (in the Southern Region); and Eastern, Midland and Dublin in the Eastern and Midland Region

178 Action programme for Effective Local Government, Putting People First, Department of the Environment, Community and Local Government, October 2012

Given its strong interdependence with enterprise development, DJEI and its agencies will continue to inform and influence the planning, development and creation of an attractive environment. Over the past number of years there has been a greater degree of collaboration between DECLG (particularly the Planning and Local Government sections) and DJEI in terms of sharing of knowledge and expertise in the development of regionally based plans. This ongoing interaction will remain crucial as the RSEs are progressed, as will engaging with a wider community of sectoral expertise within sectoral agencies including tourism, film, food, forestry and marine. The forthcoming Regional Action Plans for Jobs developed by DJEI and its agencies and Enterprise 2025 will form crucial inputs to the RSEs. In addition, the enhanced approaches to sectoral ecosystem development at the national level and strengthened clustering proposed in this strategy will have a spatial dimension that should also inform the RSEs.

## Regional employment trends

During the recessionary period, employment losses were experienced across all regions (we use the term regions in this section to reflect NUTs III as distinct from the more recently defined Strategic Planning Areas in the Regional Assemblies Establishment Order in 2014 drawing from data available through CSO). National employment declined between Q2 2008 and Q2 2012, a decline of 14.5 percent.

The impact of the downturn in employment post 2008 was felt to varying degrees across regions. Employment losses ranged from 11.9 percent in the Mid-East, to as high as 19.8 percent in the Border and 18.1 percent in the South-East region. The reality is that most (if not all) regions outside of the greater Dublin area had developed a heavy reliance on construction and retail sectors over the boom period. The unsustainable employment growth that was largely based on these sectors served to exacerbate a structural imbalance in the enterprise mix.

**Table 3** Regional employment Q2 2007 to Q2 2015 (thousands)

	2007Q2	2008Q2	2009Q2	2010Q2	2011Q2	2012Q2	2013Q2	2014Q2	2015Q2
<b>Border</b>	221.8	217.8	196.8	190.1	187.1	174.6	183.1	185.0	193.1
<b>Midlands</b>	124.0	121.3	110.7	105.2	108.4	105.2	109.7	113.5	116.0
<b>West</b>	202.7	207.4	195.2	184.3	179.0	179.5	183.7	178.3	183.3
<b>Dublin</b>	629.4	637.7	586.7	562.1	555.2	547.4	555.1	576.4	591.8
<b>Mid-East</b>	250.6	252.9	232.9	228.1	223.7	222.7	219.0	228.5	232.7
<b>Mid-West</b>	175.0	174.2	158.1	151.2	156.7	150.1	150.9	148.0	152.3
<b>South East</b>	224.2	227.0	204.0	190.9	184.5	186.0	187.7	198.5	206.6
<b>South West</b>	308.5	309.1	289.7	281.6	266.6	270.7	280.7	273.3	283.0
<b>State</b>	2,136.1	2,147.3	1,974.0	1,893.6	1,861.3	1,836.2	1,869.9	1,901.6	1,958.7

Source: CSO, QNHS (Statbank, various years)



As we return to economic recovery the evidence indicates that all regions have benefited from the more recent return to job creation. Of the 122,500 total increase in employment over the period Q2 2012 to Q2 2015, Dublin has accounted for the majority share 44,400 (36 percent). The South East accounted for 20,600 (16.8 percent) followed by the Border at 15.1 percent and the South-West at 10 percent, and all regions have seen an employment uplift (Table 3).

Nevertheless, the regional proportionate spread has not altered significantly over the period 2008 to 2015 when total employment stood at 2,147,300 and 1,958,700 respectively (Figure 5).

**Figure 5 Regional employment as a proportion of total employment 2007 and 2015**



Source: CSO, QNHS

### Place-making in Ireland's regions - overarching considerations

The enterprise structure differs across regions (based on NUTS III areas) in terms of sectoral and occupational profiles. National policies need to be attuned to the differences in a region's competitiveness, and the implementation of national policies needs to have regard to a region's distinctive characteristics. DJEI, together with its enterprise development agencies, has progressed a highly collaborative process, working at the regional level, to develop 'bottom up' Regional Action Plans for eight areas. The Plans harness the strengths, assets and champions within the regions to identify what makes (or can make) the region distinctive and to set out actions that will be driven locally and regionally to make a difference<sup>179</sup>.

This top down/bottom up approach is extremely important if we are to optimise the potential of the regions over the coming decade. It is a balance that should facilitate the differences, while avoiding 'territorial', insular or competing agendas that would not serve the country well in an international context. There are a few overarching considerations in that regard:

<sup>179</sup> Those published to date include Midlands, South West and South East and all are available at <https://www.djei.ie/en/Publications/>

- The concept of 'balanced' regional development has been traditionally construed as a redistribution of economic activity and population to achieve economic 'equalisation' across the country. A more contemporary understanding is where regions are enabled to realise their potential as contributors to economic recovery and growth, and thereby reduce regional disparities.
- As a small country, we need to be aware that the strategic planning areas are not necessarily viable economic entities in their own right and should not be seen in isolation from each other despite the application of necessary administrative boundaries. Effective leadership is crucial to develop the underlying resources and potential within regions into employment opportunities and economic growth.
- Strategic investments within the overarching national context, and actions focused on maximising the competitive advantages and potential of each of the regions are key to ensuring each region can contribute to, and participate in Ireland's future national growth, and sustain a higher standard of living. Capital investments need to be prioritised to underpin the development and growth of Ireland's productive sectors and place-making objectives and all possible funding options should be considered<sup>180</sup>.
- Regional growth centres remain key to the development of the regions – and it is crucial that they are well connected with their hinterlands, facilitating mobility of people, goods and data. Although it did not proceed due to financial constraints, the Gateway Innovation Fund initiated in 2010 had already stimulated the leadership and collaboration needed to develop 'Place' and vibrant city-region areas.
- State Aid restrictions for supporting large entities in particular mean that we need to ensure that regional disparities are redressed through place-making investment<sup>181</sup>.
- As the country turns tentatively towards economic recovery and growth, concerns about levels of unemployment in some areas throughout the country are being voiced, along with the expectation that FDI can and should play a role in the solution:
  - While FDI has a role to play in regional economic development (and IDA Ireland has clearly set out its objectives for attracting investment to areas outside of the Dublin and Cork urban centres in its recently published strategy for the period to 2019<sup>182</sup>) it cannot of itself be *the* regional economic development strategy<sup>183</sup>.

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180 The Department of Public Expenditure and Reform has recently published Building on Recovery: Infrastructure and Capital Investment 2016-2021 which sets out capital expenditure priorities for the period to 2021 (September, 2015)

181 Under the revised Regional Aid Guidelines to cover the period 2014-2020, Ireland maintains regional aid qualification for areas accounting for 50 percent of the country's population, and including some specific locations within non qualifying areas. Aid intensity has been retained at the same level, including 10 percent for large enterprises

182 Winning: Foreign Direct Investment 2015-2019, IDA Ireland, 2015

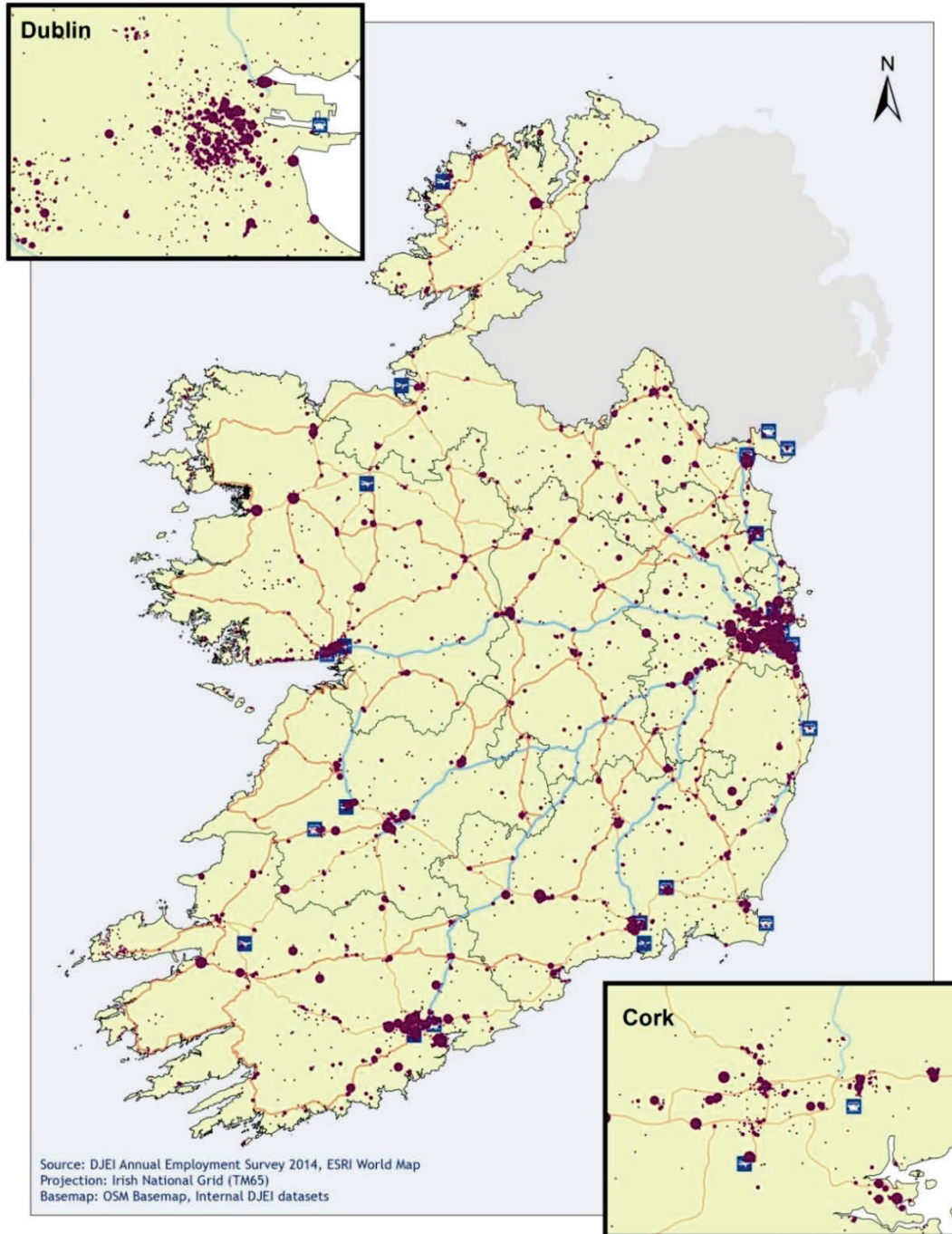
183 In past decades, there was a very strong association between regional employment creation and FDI. During the 1970s and 1980s foreign multinational subsidiaries, mainly in manufacturing, were successfully attracted to a widely dispersed set of regional locations, with some of them continuing to operate from these locations to the present time. Today the picture is considerably different

- The geographical pattern of investment (with reference to employment in agency-supported foreign owned entities) varies by sector, with manufacturing employment still maintaining a more dispersed regional spread to that of services (refer to Maps 1-3)<sup>184</sup>. New investments and re-investments in regional locations today demonstrate that there is a viable value proposition for a non-city location, given the right conditions, and these encompass a range of factors, from the availability of suitable property and development lands, to quality of life factors that help to attract and retain talent.
- Sustainable economic growth and employment creation will come from a broad base of possible activities; it is critical that potential is recognised and supported across a range of possible sources both indigenous and from overseas.

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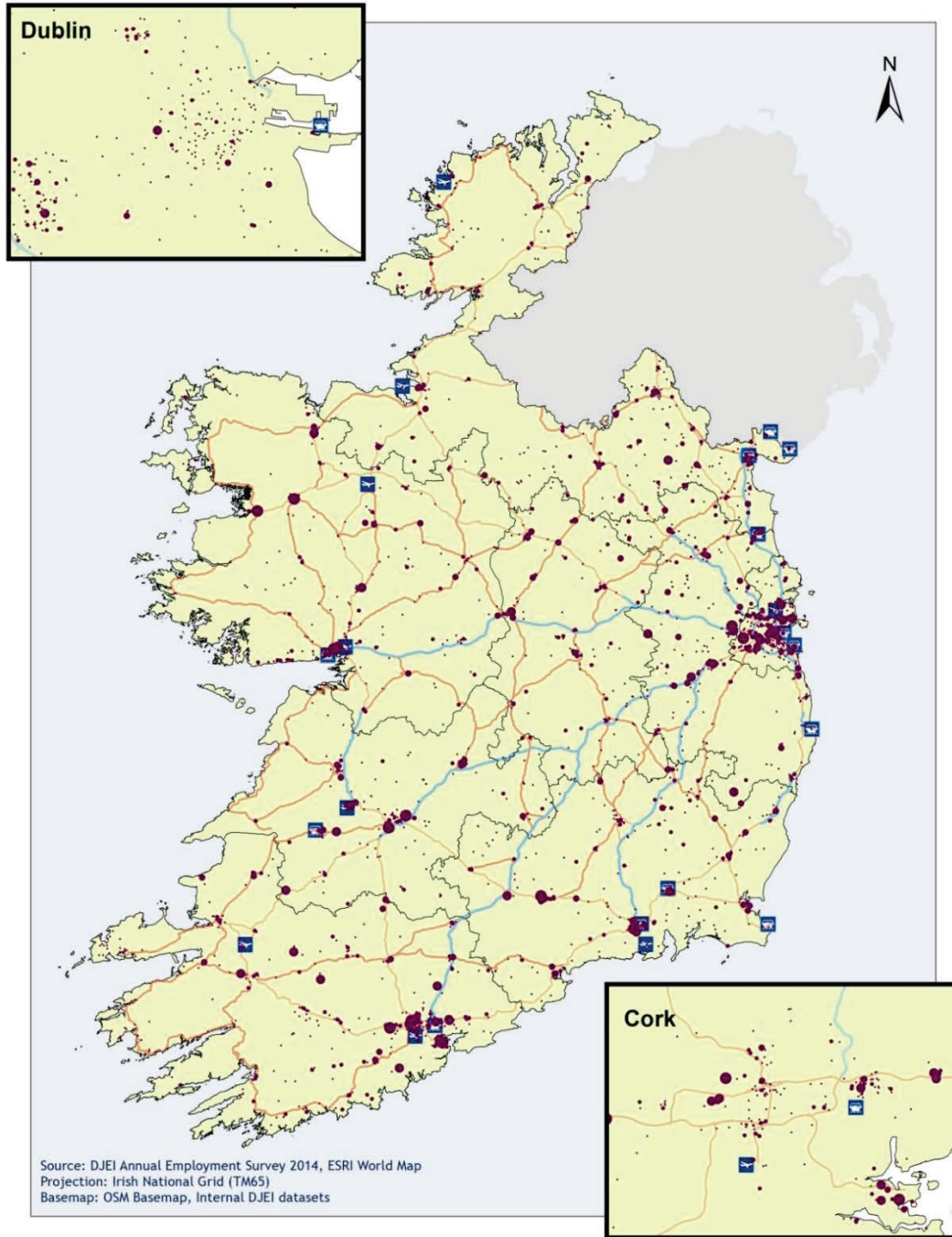
184 See Appendix IV for additional maps

Map 1 Distribution of all agency supported companies in 2014, classified by employment size



- Employment range**
- 1 to 50
  - 51 to 250
  - 251 to 500
  - 501 to 1000
  - 1001 +
  - Motorway
  - National Road
  - ⚓ Seaports
  - ✈ Airports
  - NUTS 3 Region

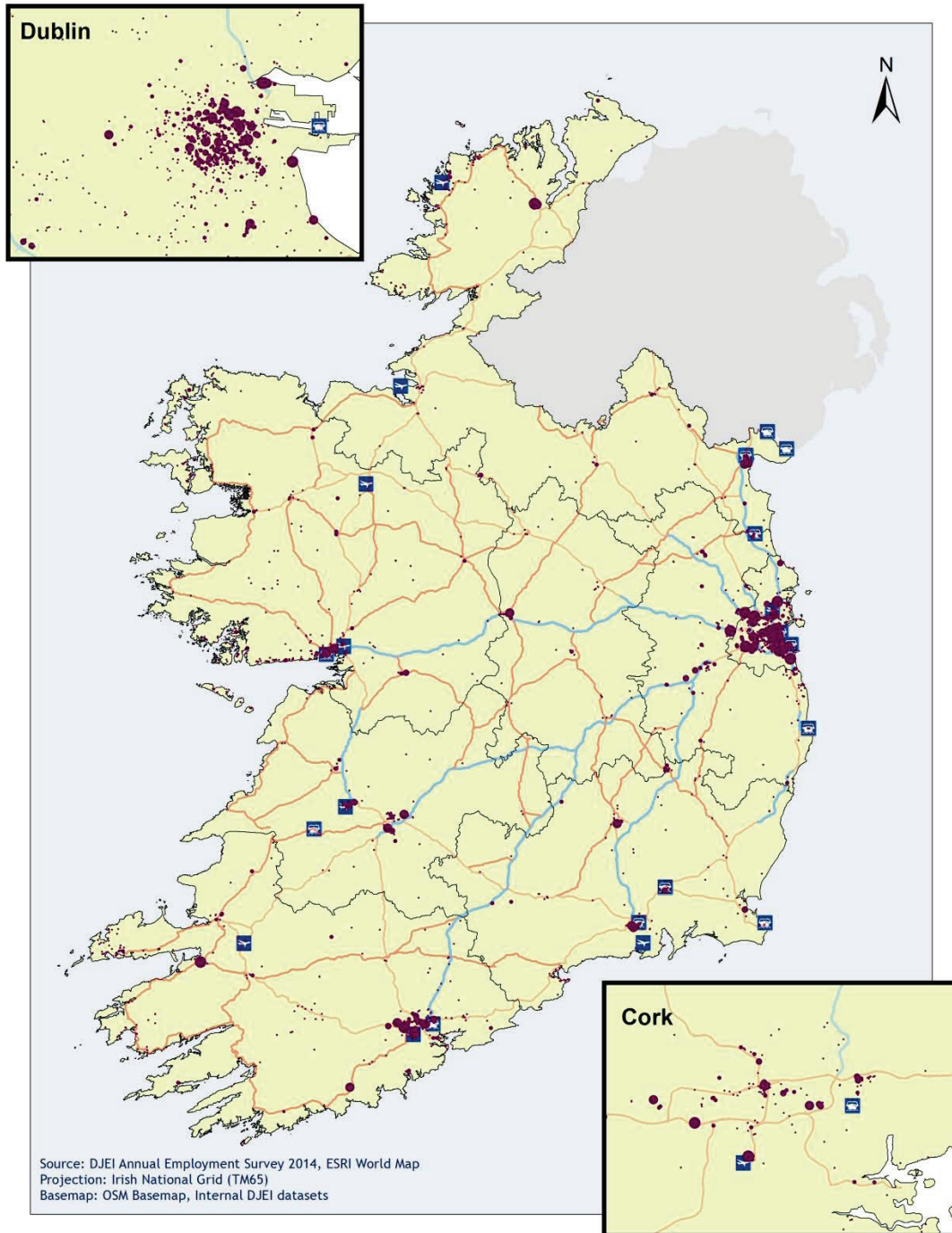
Map 2 Distribution of all agency supported manufacturing companies in 2014, classified by employment size



- |                         |               |                 |            |                 |
|-------------------------|---------------|-----------------|------------|-----------------|
| <b>Employment range</b> |               |                 |            |                 |
| • 1 to 50               | • 501 to 1000 | — Motorway      | ✈ Airports | ■ NUTS 3 Region |
| • 51 to 250             | • 1001 +      | — National Road | ⚓ Seaports |                 |
| • 251 to 500            |               |                 |            |                 |



Map 3 Distribution of all agency supported services companies in 2014, classified by employment size



**Employment range**

- 1 to 50
- 51 to 250
- 251 to 500
- 501 to 1000
- 1001 +
- Motorway
- National Road
- ⚓ Seaports
- ✈ Airports
- NUTS 3 Region

## Realising potential - harnessing regional difference

Regions (NUTS III areas) throughout Ireland are different in terms of potential, critical mass, stage of development, nature of sectors, skills profile, innovative capacity, natural resources, cultural and/or heritage assets etc. Such potential needs to take into account a whole of enterprise approach - including sectors and activities that may not 'sit' within agency portfolios. Each region faces challenges that are specific to it, and that require appropriate responses depending on its needs. Fundamental to place-making is identifying the potential growth sectors in a region and exploiting these opportunities by marshalling private and state interests towards creating places that will stimulate clustering and attract investment.

As stated above, DJEI has worked with a range of key stakeholders to develop distinctive Action Plans for the eight NUTS III areas (Action Plan for Jobs – Regional). These Action Plans will drive collaborative action to focus the range of public bodies, agencies and the private sectors on a clear agenda to drive entrepreneurship, company development and investment in these areas over the coming years. We have drawn from the analysis undertaken to inform these plans to provide a snap-shot of the characteristics of the regions.

**The West** comprises the counties of Galway, Mayo and Roscommon and has a total population of 437,100, or 9.5 percent of the State total<sup>185</sup>. The region is the most sparsely populated of all regions in Ireland - although this is largely because of its rugged landscape. It is rich with natural resources and habitat, which combined with the benefits of dynamic urban locations and sense of place, provides an attractive environment for enterprise investment, for tourism development and from a lifestyle choice perspective<sup>186</sup>. The area has had strong economic performance, and Galway city is recognised as a vibrant and cultural urban centre. The West benefits from the high visibility Wild Atlantic Way tourism strategy; its strong and diverse enterprise base<sup>187</sup>; and research and HEIs infrastructures<sup>188</sup>, which offer a host of opportunities for growth. Nevertheless, there are constraints that, if not addressed, are likely to hinder the realisation of the region's full potential (including, for example, higher youth unemployment, infrastructure deficits, lack of suitable office space in urban areas, and a 'mis-match' of supply/demand in housing throughout the region). A review by an independent statutory committee is currently underway in relation to local government arrangements in Galway city and county (the largest urban and county areas respectively in the West).

**The Border NUTS III** area which has a population of 503,900 or 10.9 percent of the State total<sup>189</sup> is an amalgam of six counties which are situated along the border with Northern Ireland - namely Donegal, Sligo, Leitrim, Cavan, Monaghan and Louth. The configuration of the Border region and its physical geography sets it apart from the other NUTS III areas. It incorporates three independent urban areas - Sligo, Letterkenny-Derry and Dundalk-Newry. Although for many years the unstable political situation in Northern Ireland has hindered optimum economic performance in the area, more recent developments and investments have seeded the basis for

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185 Annual Population Estimates, CSO Statbank

186 Westport - Best place to live in Ireland (Irish Times Award 2013); Erris - Best Place in Ireland to go Wild (Irish Times Award 2014)

187 Including medical technologies, ICT, creative sector (including film and digital media) artisan and organic foods etc.

188 Including for example Insight, Curam, Ryan Institute, NUIG and GMIT

189 Annual Population Estimates, CSO Statbank

change and future growth. The challenges remain significant, but there is potential to continue to deliver on strategic infrastructure priorities relating to both North and South of the border, to access EU and cross border development funds for investment, and (through the Action Plan for Jobs process) develop and deliver on a coherent approach to enterprise development<sup>190</sup>, leveraging cross border networks where relevant.

**The Midlands** NUTs III area has a population of 290,600 or 6.3 percent of the State total<sup>191</sup>, making it the smallest in terms of population of the eight NUTs III areas. It comprises counties Longford, Westmeath, Offaly and Laois. The polycentric Gateway as envisaged in the NSS requires strong linkages between Athlone, Mullingar and Tullamore, although the concept is not as developed as might have been originally envisaged. The Midlands central location and close proximity to Dublin give the region a natural advantage in terms of inter-regional and international accessibility. Due to its higher dependence on construction during the boom period, the negative implications are still evident in that the Midlands has the highest unemployment rate of all NUTS III areas (at 12.4 percent Q1 2015). However, it should be noted that this has fallen from a peak of 19.5 percent at Q3 2011, and that the Midlands has benefitted from the overall national increase in employment since then. The region has a relatively high proportion of employment in manufacturing, in public sector administrative services (including healthcare) and in commercial state companies (Bord na Mona and Coillte) that may present a distinctive base of capabilities to tap into new and emerging growth areas (e.g. materials for advanced manufacturing, renewables, eHealth/independent living).

**The South-West** NUTS III area encompasses counties Cork and Kerry and has a population of 673,400 or 14.6 percent of the State total<sup>192</sup>. There is a contrast between the metropolitan area of Cork, the wider Cork County and Kerry in terms of GVA performance<sup>193</sup> and the nature of enterprise - however the combination of a strong city region and distinctive natural landscape delivers a compelling proposition for business, talent and lifestyle. The region has a dynamic and broad enterprise sector with a predominance in pharmaceuticals, ICT, food (including functional foods) and tourism, with significant potential in medical devices and internationally traded services (including an emergent payments sector)<sup>194</sup>. It also boasts a number of high visibility research centres of scale<sup>195</sup>, with strong connections to enterprises in the region and internationally. It also has a number of strong business networks, highly innovative enterprises, an entrepreneurial culture, and a demonstrated ability to work collaboratively to harness central funding for the benefit of the entire region. Nevertheless, there remains significant scope to better connect the individual assets that are in place across the region to develop a compelling proposition and to accelerate growth potential. There is also an independent review currently underway of the local government arrangements in Cork.

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190 A novel approach will be required, given the administrative construct of the region that does not align with functional areas of activity and potential

191 Annual Population Estimates, CSO Statbank

192 Annual Population Estimates, CSO Statbank

193 This is influenced by the presence of a number of foreign owned entities involved in high value added pharmaceuticals

194 Employment in Enterprise Ireland supported international services and financial services enterprises grew by 52.4 percent and 25.6 percent respectively over the period 2011-2014, DJEI Annual Employment Survey

195 Including for example Tyndall, Food for Health Ireland, IMERC etc.



**The Mid-West** comprises counties Limerick, Clare and the former North Tipperary and has a total population of 378,200 or 8.2 percent of the State total<sup>196</sup>. The region has a strong history of progressive thinking in terms of infrastructural and place-making initiatives such as Plassey Technology Park and the Shannon Free Zone. Its growth potential, however, had been somewhat hampered by administrative structures that compromised a strategic approach to the development of Limerick City and its environs. The changes made to administrative structures involving the merger of Limerick City and County Council and investments in urban regeneration<sup>197</sup> aim to redress this issue. There is a strong base of sectors/activities, higher education institutes (HEIs), and research institutes that provide an excellent platform for growth - and given that one of the primary constraints has been addressed, we can anticipate that this growth will be accelerated so that the region can fully leverage its assets and potential.

**The South-East** NUTS III area has a total population of 504,800 or 11 percent of the State total, and comprises counties Carlow, Kilkenny, and the former South Tipperary<sup>198</sup>, Waterford and Wexford. The area has a distinctive settlement pattern with five relatively large centres of population. In reality the northern parts of the region are more naturally drawn toward Dublin. Strategic assets include the IDA Ireland investment in its utility intensive site in Belview, the Telecommunications Software and Systems Group (TSSG) research centre at Waterford Institute of Technology (that is now seeking to exploit the regional potential for agri-tech), a strong manufacturing and services base, emerging potential in e-games, a design hub in Kilkenny and distinctive tourist attractions. There are challenges facing the region, not least because of the fact that the administrative construct does not align with functional clusters of activity, although local government arrangements have been strengthened by the recent mergers of local authority structures in counties Tipperary and Waterford. The DJEI Regional Action Plan for the South-East aims to bring a coordinated approach to harness the distinctive diversity and pockets of competitive dynamics within the region and to forging mutually beneficial connections with neighbouring areas.

**Dublin and the Mid-East** (the East)<sup>199</sup> With well over one-third of Ireland's population (1,821,500 or 39.6 percent of the State total<sup>200</sup>) the East region, comprising counties Dublin, Wicklow, Meath and Kildare, is the most populous and densely populated region in Ireland. Overall, the pattern of population growth and settlement strongly reflects the influence of Dublin City far beyond its administrative boundaries and underlines the need for coordination of planning policies region-wide, including a focus on achieving higher residential densities to counter urban sprawl. In terms of economic activity, the most prominent sectors in employment terms are the public sector, the financial services sector and the retail trade sector. The ICT services sector has seen considerable absolute growth over the last decade. With its young<sup>201</sup>, multi-

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196 Annual Population Estimates, CSO Statbank

197 In 2013 the Government announced a €253 million investment over a 10 year period

198 The NUTs III area is subject to review. For the purpose of the formulation of RSEs it is envisaged that Regional Assembly members for Tipperary will participate in both the Mid-East and South East Strategic Planning Areas Committees

199 The 'East' is an amalgam of the two NUTs III regions: Dublin (i.e. County Dublin) and the Mid-East (Meath, Kildare and Wicklow)

200 Annual Population Estimates, CSO Statbank

201 The age profile of the East region is different to that of others particularly in terms of the larger proportion in the more economically active and demographically significant 25-44 age group

cultural and diverse population profile, the Dublin area boasts a dynamic, vibrant entrepreneurial and hi-tech environment that is attractive for business start-ups, for FDI and for talent.

**Table 4 Four types of place-making - examples**

The problem	The solution	The payoffs
<b>Standard place-making</b>		
Communities are not effectively using public spaces to create vital, vibrant and liveable communities that people want to live, work, play and learn in	Broad public and stakeholder engagement in revitalising, reusing and creating public spaces using short and long term techniques rooted in social engagement and new urbanist design principles	More quality places with quality activities and a strong sense of place. More vital, vibrant and liveable public spaces, communities and regions that residents, businesses and visitors care deeply about
<b>Strategic place-making</b>		
Communities are not competitive in attracting and retaining workers	Revitalisation that increases housing and transportation choices, and urban amenities to attract talented workers	Faster gains in liveability, population, diversity, jobs, income and educational attainment than by standard place-making
<b>Creative place-making</b>		
Cities and towns confront structural changes and residential uprooting	Revitalisation by creative initiatives that animate places and spark economic development	Gains in liveability, diversity, jobs and income. Innovative products and services for the cultural sectors
<b>Tactical place-making</b>		
Many physical improvements are expensive and policymakers are understandably reluctant to commit resources due to uncertain risks	Test various solutions using low cost proxies to gauge effectiveness and public support	The public and policymakers can actually see the result and degree of support for various options before committing permanent resources

Source: Definition of Place-making: Four Different Types, Mark A Wyckoff, FAICP, MSU Land Policy Institute

The Regional Action Plans for Jobs will set out ‘bottom-up’ actions that can be driven by the regional actors. These actions will be aligned with national enterprise objectives and will be strengthened by cross regional collaboration and adapted to regional circumstance, to deliver on the potential that we have for growth throughout the country. The Minister for Jobs, Enterprise and Innovation announced a €250 million fund to drive enterprise development across the country, including investments in advance property solutions and competitive

initiatives to stimulate collaboration in the areas of entrepreneurship, innovation, enterprise infrastructure and job creation. The different types of place-making that are situation specific as set out (Table 4) can inform region specific approaches.

#### Focus on outcomes - not activity

There are likely to be a number of similar 'horizontal' challenges (that have a regional perspective) and it is important that a coordinated approach is taken to addressing them - including for example Skills and Innovation. With the intensified focus on regional development, it is important that we do not inadvertently create 'consultation' fatigue, and/or duplicate efforts, and/or see an increase in extensive 'activity' that is neither sustained or delivering outcomes.

In addition to the Action Plan for Jobs process, there are a number of initiatives either underway or due to start:

- the establishment by Department of Education and Science of regionally based fora, involving education and training providers as well as industry to drive and realise a structured and systematic approach to identifying and delivering to skills needs (including likely future enterprise requirements determined by the evolution of sectors/activities);
- a pilot initiative being run by Enterprise Ireland focused on strengthening the interactive role of the HEIs within regions as a 'meeting place' and encompassing innovation, skills, networking, access to facilities etc.; and
- the development of (statutorily based) RSEs by the Regional Assemblies that envisages the establishment of Economic Fora at NUTS III level, involving consultation and the development of inputs incorporating both economic and planning dimensions.

Given the interplay between the needs of enterprise and 'place-making' /spatial planning, we aim to deliver a coordinated and structured approach between DJEI and DECLG, and involving well managed engagement with other stakeholders, bodies and agencies as required.

## Developing city regions throughout Ireland

Urban areas will play a key role in realising the potential of our regions throughout Ireland. The city region concept acknowledges that an urban growth centre has an impact much broader than its administrative boundaries and impacts on the economic potential of its wider hinterland. The development of the NPF and RSEs (informed by the Regional Action Plans and Enterprise 2025) will take account of the role that regional growth centres can play in Ireland's future economic development and of the strategic investments needed to realise their full potential. A city's competitiveness relies on a range of factors, including its business and regulatory environment, the quality of human capital, its quality of life and quality of the public realm; factors that not only help a city sustain a high economic growth rate, but also create a stable and harmonious business and social environment. Cities provide a diverse marketplace where supply and demand can meet, and the buzz of cities gives dynamism to business. There are a number of interesting trends in evidence globally that warrant consideration in this regard.

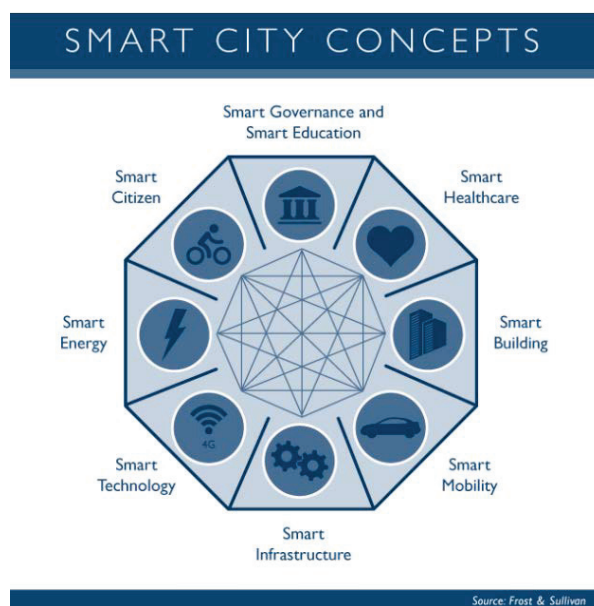
### The emergence of tech hubs

Tech companies in particular want to be part of the buzz of the city centre. These companies are increasingly owned by 'Generation Y'<sup>202</sup> founders (and their employees), who want to live and work in the city and want to work flexibly where there is good connectivity and an environment supporting collaboration. Although Silicon Valley remains by far the number one tech ecosystem in the world, in recent years a number of cities have started to evolve their own tech ecosystems.

The phenomenon of the Tech Hub is primarily organic and self-driven; but can be encouraged by governments and City Authorities in partnership with the private sector, to build momentum and competitive advantage in terms of their city's attractiveness to internationally mobile entrepreneurs and early stage companies, emerging 'home grown' start-ups, and venture capital.

### The smart city concept

Many cities are seeking to derive place competitiveness benefits by demonstrating 'smart' characteristics. Although there is no single definition, at its simplest, the concept envisages a smart city as one that has digital technology embedded across all city functions.



<http://www.forbes.com/sites/sarwantsingh/2014/06/19/smart-cities-a-1-5-trillion-market-opportunity/>

While the objectives are to achieve environmental, economic and social sustainability through systematic integration of ICT in their planning, design, operations and management for the benefit of the citizen, smart cities boost the location's attractiveness for people and businesses, especially those who want to innovate<sup>203</sup>.

From Ireland's perspective, the smart city concept plays to our strengths in ICT and our small scale, and in this respect could constitute an opportunity to develop a differentiated offering, to attract mobile talent, entrepreneurship, FDI, and to stimulate innovation across all enterprise.

The proposed grand challenges approach in Section C - Innovativeness is pertinent.

202 The age group born after 1980

203 Examples of smart city initiatives include: Amsterdam Smart City (ASC); Barcelona (e.g. Open Data BCN); Copenhagen (first carbon neutral city ambition); and Esbjerg, Denmark (Next Step City)

### A continuing focus on developing the Dublin city region

As we rightly seek to optimise the potential for job creation throughout the country, we need also to remain aware that the international visibility and reputation of our capital city is crucial for the continued attraction of FDI, entrepreneurship, tourism and talent.

The research shows that a growing share of investment is locating in or around metropolitan areas in order to take advantage of place-specific advantages<sup>204</sup>. London was the top destination for FDI projects worldwide in 2012, 2013 and 2014. Other top performers include Paris, Singapore, Amsterdam, Shanghai, Chicago, Dubai and Bangkok. Dublin was ranked 12<sup>th</sup> in the world in 2014 down from 7<sup>th</sup> 2013<sup>205</sup>. Dublin is one of only six EU cities in the top 20 on this ranking. Today cities are competing with cities for investment.

Over time, the attractiveness of Dublin has emerged as a key determinant in Ireland’s overall FDI performance. The dynamic Dublin city region is particularly important as a host for fast growing emerging companies and for internationally traded services activities, and will likely continue to attract proportionally more new investments than the rest of the country. Dublin, as Ireland’s main national access point is a key attractiveness factor for *any* ultimate location in Ireland (and as cited above, IDA Ireland has a strong regional focus incorporated into its recently published strategy).

Relative to other city regions in Europe and elsewhere, Dublin is small. But its relative size has proven to be one of its distinct advantages and a differentiating aspect internationally. Dublin has become a magnet for fast growing young internationally mobile companies, entrepreneurs and talent, drawn to a city that can provide a unique business and living experience. There is a strong organic dimension to this – in that it has not been overly planned.

The degree to which it is connected with other cities internationally is also an important factor – ‘while cities may be competing at a national level, internationally they appear to be getting closer’<sup>206</sup>. For the future, due attention and planning is essential to sustain the dynamic which has grown in recent years.

	Realising the potential of our regions	
	Develop and publish the National Planning Framework (the successor to the National Spatial Strategy) to set out the spatial forward planning framework and overarching principles, including a clear urban policy that reinforces the importance of Dublin as our Capital city and of other city regions throughout the country, and that informs strategic national investments (with regional impact) and priorities over the coming decade.	DECLG
	Roll out the Action Plan for Jobs at regional level (NUTS III areas).	DJEI

204 Global Location Trends, IBM Global Business Services, 2013, 2015

205 Global Location Trends, IBM Global Business Services, 2015

206 The Wealth Report 2013, commentary by Prof. Peter Taylor, Knight Frank, 2013

	<p>Support the development of regional collaborative initiatives among private and public sector actors in the regions that promote innovation and productivity growth through competitive funding calls over the period to 2020. It is envisaged that the funding calls will attract some matching funding from other regional or private sources. The three funding areas include:</p> <ul style="list-style-type: none"> <li>▪ €5 million focused on community driven enterprise initiatives;</li> <li>▪ €5 million focused on providing additional funding to LEOs on foot of innovative proposals specific to their region; and</li> <li>▪ €40 million to support significant projects to improve or leverage identified enterprise capability in the region.</li> </ul> <p>Competitive calls for proposals will be informed by the Regional APJs, with the first tranche of the regional fund launched in 2015 to stimulate collaborative action and novel approaches to harness regional assets with a view to realising potential and accelerating growth.</p>	<p>DJEI/EI</p>
	<p>Develop the Regional Spatial and Economic Strategies (RSES) led by DECLG, in conjunction with the Regional Authorities, DJEI and others, with a strong focus on creating competitive regions in which enterprise and entrepreneurship can succeed. The RSEs will provide an overarching framework for the creation of new places with attractive characteristics and infrastructures to stimulate enterprise investment and to realise economic potential.</p>	<p>DJEI, DECLG</p>
	<p>Formulate and implement Local Economic and Community Plans to maximize the potential of local areas and guide local authority action to contribute to the collaborative development of strong regional economic growth centres.</p>	<p>Local Authorities</p>
	<p>Strengthen the role that HEIs will play within their regions for a strengthened and richer industry liaison system to stimulate greater engagement with enterprise (and SMEs in particular) across a broad agenda including innovation, knowledge sharing and dissemination, peer networking and entrepreneurship with the aim of accelerating enterprise growth.</p>	<p>DES, DJEI, HEA, EI, IDA</p>
	<p>Prioritise place-specific infrastructure deficits that are impacting negatively on the attractiveness of our city regions for enterprise investment. This will include orienting the Public Capital Programme toward investments that support business needs and targeting European investment/development funding over the 2015-2025 period.</p>	<p>DPER, DTTAS, DECLG, DJEI</p>
	<p>Roll out a 5-year €150 million capital investment programme to help attract more foreign investment and jobs into each region. This programme will include investments over the coming years in building advanced manufacturing and office facilities in Sligo, Tralee, Castlebar, Galway, Dundalk, Limerick, Athlone, Carlow and Waterford.</p>	<p>IDA</p>



# Innovativeness

## Introduction

Successful enterprises are those that innovate. Innovation enables enterprises to differentiate their product and services offerings, to develop new ways of reaching customers and markets, to disrupt existing business and revenue models, and to improve processes, systems and organisational structures. Innovation plays a crucial role in creating competitive advantage, enhancing productivity, and ultimately increasing profitability so that enterprise can continuously reinvest in its future. The sources of innovation are broad, involving not only the R&D laboratory and/or HEIs (or technology push) but also the customer, markets, suppliers, competitors and partners.

Since the early 2000s, the State significantly increased its investments to develop Ireland's R&D infrastructures and capabilities - an essential investment for a developed open economy. Today there is a greater number of enterprises investing in RD&I - although there is considerably more to be achieved. We need to ensure that the State's investment is leveraged and to realise the desired uplift across Ireland's enterprise base to deliver economic impact and wider societal benefits. We also need to consider the evolution of Ireland's national innovation system in the context of increasing contribution to economic growth arising from services activities.

The ability to innovate is now essential for *all* enterprises, regardless of sector, nature of activity or scale and regardless of whether exporting or locally trading. It is a policy imperative that we stimulate more enterprises to engage in RD&I. Looking across the entire spectrum of the enterprise base in Ireland this will require that, at a minimum, an enterprise builds capabilities and engages in networks to take advantage of technological advances and of R&D that is undertaken elsewhere in order to adapt to their own circumstance to innovate and improve competitiveness.

It is people who innovate, who have ideas, who build relationships. Our ability to develop, nurture, retain and attract talent is directly relevant and is set out in detail in Section N. Developing and strengthening our enterprise base also requires increased mobility and engagement between people involved in the research and business communities.

This section considers innovation (and innovativeness) in the round and identifies the actions necessary to ensure that we attain our ambition to be the *best country in which to succeed in business*.

This chapter sets out:

- Ireland's national innovation system – an overview;
- the international context;
- strengthening Ireland's systems approach;
- the enterprise objectives and challenges; and
- innovativeness – a mind-set, a culture and way of working.



## Ireland's national innovation system – an overview

The focus in this chapter is on how we can strengthen enterprise RD&I performance as a key component of a dynamic and impactful innovation ecosystem. There is a strong inter-connectedness between science, technology and innovation policy and enterprise policy and both of these strategies have been developed in concert<sup>207</sup>.

Although there is no single definition of a national innovation system (NIS), the concept rests on the premise that innovation and technical progress are the result of a complex set of relationships among actors producing, distributing and applying various kinds of knowledge<sup>208</sup>. The actors involve enterprises, universities, public research institutes<sup>209</sup> and interactions include joint research, personnel exchanges, cross-patenting, use of facilities etc. The innovative performance (or 'innovativeness') of a country depends to a large extent on how these actors relate to each other as part of a collective system of knowledge creation and use.

Ireland's innovation system is maturing. We need to acknowledge the considerable progress that we have made over the past decade in particular, while at the same time focusing our efforts on addressing constraints to realising our ambition.

### Significant increases in Government investment

Investment in RD&I in Ireland has significantly increased since the early 2000s. We have seen a doubling of gross investments to €2.76 billion in 2013<sup>210</sup>. Government expenditure, aimed at strengthening Ireland's R&D capabilities and infrastructures rose from €727 million in 2005 and peaked at €930 million in 2008<sup>211</sup>. This investment has since fallen and is expected to reach €735 million in 2015 - back to levels of a decade ago, which may now have implications for our ambition for enterprise development over the coming decade<sup>212</sup>. The intensity of this investment is low by comparison with selected comparator countries (less than half that of Denmark (1.01 percent) and Finland (0.94 percent)) and below the EU average of 0.63 percent (GBAORD as a percentage of GNP for Ireland was 0.45 percent in 2014).

Within this, Higher Education expenditure on R&D (HERD) increased in absolute terms over the last decade from €238 million in 2000 to €708 million in 2010. HERD has, however, fallen to an estimated €640 million in 2012<sup>213</sup>. HERD, as a percentage of GNP, at 0.45 percent, is at the same level as EU27 average and above the OECD average of 0.43 but still lags behind leading small innovative economies such as Denmark (0.95 percent).

Nevertheless, this investment in building a science and technology base is delivering results. Ireland is in the top 20 countries ranked by citations per thousand population and indications

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207 This chapter of Enterprise Policy 2025 has been informed by the development of the successor to Ireland's Strategy for Science, Technology and Innovation. The new SSTI covers a broader agenda in more detail and will be finalised by end 2015

208 National Innovation Systems, OECD, 1997

209 Defined as the Triple Helix Model

210 Includes investments by government and by business

211 Government budget appropriations or outlays on R&D (GBAORD), State Investment in Research and Development, DJEI (forthcoming)

212 State Investment in Research and Development, DJEI (forthcoming)

213 Survey of Research & Development in the Higher Education Sector, 2012/2013, July 2015, DJEI

show that Ireland's scientific research is of leading international quality in a number of niche areas, such as immunology, and molecular genetics and genomics<sup>214</sup>. This investment has also played a key role in developing and supplying the talent needed by our increasingly innovative enterprises:

- researchers active in the higher education sector almost trebled from 2,148 FTEs in 2000 to 6,002 FTEs in 2012<sup>215</sup>;
- PhD graduates from the university sector increased from 774 in 2005 to 1,749 in 2014<sup>216</sup>; and
- employment in RD&I jobs has increased significantly in the last 20 years. Total R&D personnel, for example, more than doubled between 1997 (10,826) and 2012 (22,501).

We now have a number of internationally visible national research centres based in universities, supported through SFI's Centres and Spokes programme, that are focused on longer-term user-oriented research and that undertake research in partnership with enterprises and foster medium to long-term strategic collaborations<sup>217</sup>. These SFI investments play a key role in terms of attracting mobile high-quality researchers to Ireland and help to sell the concept of Ireland as a destination for R&D. SFI works in partnership with IDA Ireland to stimulate investment from major technology-based multi-nationals to establish R&D facilities here.

Our Technology Centres have been jointly funded by Enterprise Ireland and IDA Ireland and undertake R&D that has been defined by industry. The enterprise development agencies facilitate companies to collaborate and to identify the industry problems and areas which can be addressed through the Technology Centres.

Ireland also has a range of policy measures in place to stimulate collaboration between academic research and enterprise and to directly support enterprise RD&I activities. These include, for example innovation vouchers, innovation partnerships, commercialisation, as well as direct supports for in-firm R&D. The enterprise development agencies provided €149 million to support in-company R&D in 2013 - and this investment leverages an estimated circa €400 million of private investment<sup>218</sup>. In addition, Ireland introduced an R&D tax credit in 2004<sup>219</sup> and is currently assessing the most appropriate instrument to support IP creation and exploitation.

### Focusing State investment

It is crucial that our State investments are sustained and focused, so that we can develop scientific excellence, international visibility and critical mass in areas of research where Irish

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<sup>214</sup> As measured by citations per paper

<sup>215</sup> Survey of Research & Development in the Higher Education Sector, 2012/2013, DJEI

<sup>216</sup> Higher Education Authority, <http://www.heai.ie>

<sup>217</sup> Evaluation of Enterprise Supports for Research, Development and Innovation, Forfás, April 2013

<sup>218</sup> Based on IDA Ireland and Enterprise Ireland annual reports - this equates to amounts drawn down by enterprises during that year and should be regarded as indicative only. The leveraging estimate has been informed by Evaluation of Enterprise Supports for Research and Development and Innovation, Forfás, 2013

<sup>219</sup> The Forfás evaluations evidenced that the R&D direct supports provided by the agencies took account of the availability of the R&D tax credit and that the grant intensities reduced following the introduction of the credit

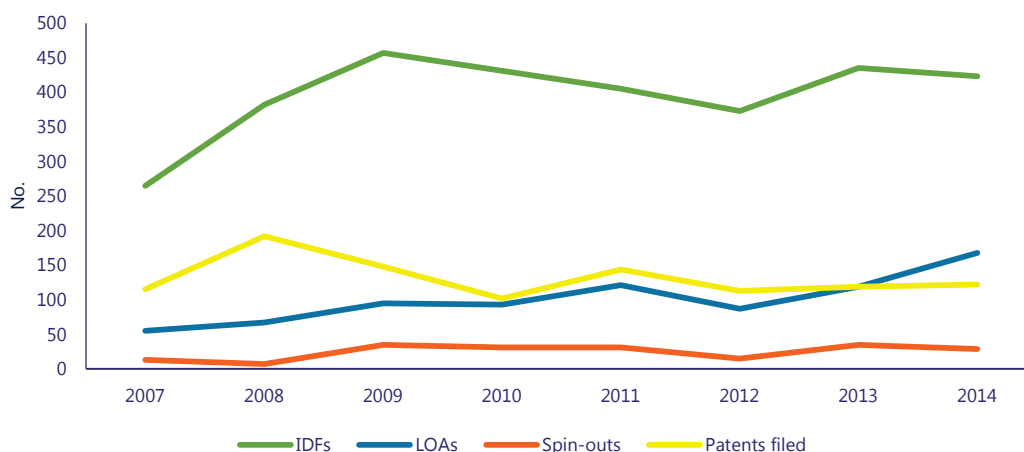
enterprise can compete and Irish society can benefit. A country of Ireland’s size can realistically only excel in a limited number of fields of research. The Research Prioritisation Steering Group<sup>220</sup> set out fourteen priority areas across six themes to inform the focus on Government investment in order to accelerate and maximise returns and the majority of State funding is now targeted at these areas.

### Knowledge transfer infrastructures

Ireland’s technology transfer infrastructures have been considerably enhanced through Enterprise Ireland’s Transfer Technology Strengthening Initiative (TTSI)<sup>221</sup>. During the first eight years of the TTSI programme (2007-end 2014) new inventions disclosed and licences signed have greatly increased. Patent applications have reached a steady state and spin-outs have increased from a negligible base (Figure 6).

A review undertaken at the end of 2014<sup>222</sup> cited the speed of evolution of the technology transfer infrastructure in Ireland and the novel approach to scaling through the creation of consortia<sup>223</sup>. The Review recommended that the State commit to sustain funding for knowledge transfer infrastructures and that monitoring and evaluation of performance be extended to cover outcomes as well as outputs (e.g. sustainability of spinouts, company use of licensed technology). It also concluded that bureaucracy needs to be further reduced in terms of empowering their TTOs to make and execute on commercial decisions, accepting that a degree of risk-taking is necessary if innovation from HEI research is to flourish.

**Figure 6 Performance under the Transfer Technology Strengthening Initiative (TTSI) 2007-2014**



Source: Knowledge Transfer Ireland

220 The Report of the Research Prioritisation Group, DJEI, Forfás, 2012

221 Enterprise Ireland committed €52.8 million in funding to the TTSI over a 9 year period from 2007-2016 aimed at increasing the level and quality of IP captured by the HEIs and transferred out to industry

222 A Review of the Performance of the Irish Technology Transfer System 2007-2012, Enterprise Ireland (complemented by an independent study commissioned by EI from Frontline), May 2014

223 Where the larger HEIs share resources and best practice with smaller Institutes of Technology

A National IP Protocol was launched in June 2012 which sets out a framework to articulate the rules of engagement for collaborative research between Research Performing Organisations (RPOs) and industry. The Protocol was intended as a living document and a review of the IP Protocol was undertaken in 2015, which is currently under consideration.

A key recommendation in the Protocol was the establishment of Knowledge Transfer Ireland (KTI)<sup>224</sup> which happened in 2013. KTI acts as a central point of reference for business-research partnership and commercialisation. Its objective is to maximise the flow of technology, ideas and expertise into companies swiftly and easily to drive innovation in products and services for economic and social benefit. KTI works with business, investors, universities, Institutes of Technology, State research organisations, research funders and government agencies to deliver on its objectives.

### Business expenditure on R&D in Ireland

Enterprises that perform research, development and innovation make a major contribution to overall wealth and job creation compared with enterprises that do not perform RD&I<sup>225</sup>. The Forfás evaluations of RD&I supports also indicates that R&D active enterprises were more resilient over the recessionary period and/or had the ability to rebound faster than a comparator group of non R&D active enterprises.

R&D investment by enterprises in Ireland has grown substantially in recent decades. We've witnessed growth in numbers of R&D performing enterprises, as well as an increase in scale of investment:

- 1,979 enterprises were R&D active in 2013, an increase of 76 percent since 2003<sup>226</sup>;
- business expenditure on R&D (BERD) rose from 0.93 percent of GNP in 2003 to an estimated 1.39 percent of GNP in 2013. Nevertheless, this performance still lags behind that of leading small innovative economies;
- R&D expenditure in the business sector is largely concentrated in experimental development accounting for 64 percent of BERD. Experimental development is closer to market, drawing on existing knowledge to develop new, or substantially improve products, processes, systems and services;
- foreign owned entities accounted for 65.2 percent of total R&D expenditure in 2013. However, in 2013, only 20.5 percent of all enterprises engaged in R&D were foreign owned firms; and
- enterprises with greater than 50 employees (i.e. medium and large companies) accounted for almost 78 percent of BERD at €1.57 billion in 2013<sup>227</sup>.

Stimulating capability and capacity across the enterprise base continues to present a challenge. Based on the analysis of achievements of targets set in the Strategy for Science, Technology and Innovation (2006-2013), progress toward meeting the science and technology targets has been

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224 KTI is located in Enterprise Ireland and funded by Enterprise Ireland with co-financing from the Irish Universities Association (IUA)

225 Evaluation of Enterprise Supports for Research, Development and Innovation, Forfás, April 2013

226 Forfás BERD surveys 2003 and 2005 & CSO BERD, Statbank 2007-2013 (latest available data)

227 CSO BERD 2013-2014, Statbank

more rapid for the public-funded research system than that led by enterprises. In particular, progress towards the targets set for the number of companies with minimum and significant scale R&D, and expenditure by Irish and foreign owned companies has been slower than envisaged. Specific challenges are set out in the section on enterprise objectives and challenges.

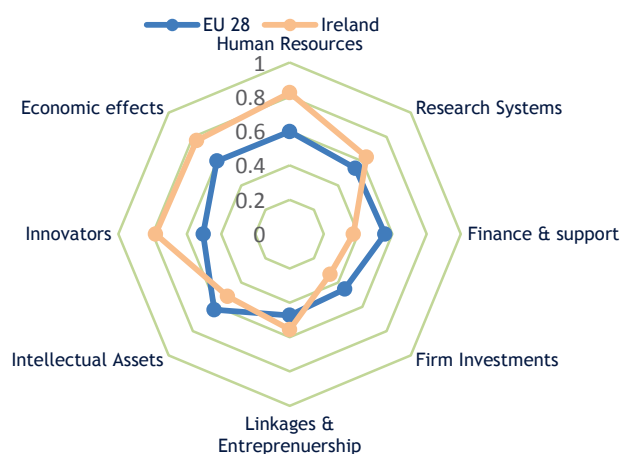
The emergence from the recessionary period presents an opportunity to more aggressively support the transformational changes needed across a wider cohort of enterprises, and to deepen the competences of those already R&D active. In this context, it is important to understand the factors across the wider national innovation system that can influence R&D engagement and the barriers at the level of the enterprise that might inhibit innovation activities. Looking at Ireland's performance in comparison with high performing countries provides valuable insights.

### The international context

The annual EU Innovation Union Scoreboard<sup>228</sup> provides a comparative assessment of the research and innovation performance of EU Member States. Innovation performance is assessed across eight sub innovation dimensions as depicted in Figure 7.

Innovation leaders are those that have an innovation performance of more than 20 percent above the EU average, and in 2014 were Denmark, Finland, Germany and Sweden.

**Figure 7 Ireland's innovation union scoreboard compared with EU 28**



Source: Adapted from EU Innovation Scoreboard 2015

Ireland is described as an 'Innovation follower' amongst its EU27 peer group having an overall innovation performance close to the average for the EU Member States, and we have seen progress in terms of overall rankings from 10<sup>th</sup> ranking in 2013 (EU27) to 8<sup>th</sup> in 2015 (EU28)<sup>229</sup>.

<sup>228</sup> Innovation Union Scoreboard 2014, Directorate-General for Enterprise and Industry, EC 2015

<sup>229</sup> Innovation followers include Austria, Belgium, Estonia, France, Ireland, Luxembourg, UK and the Netherlands - performing close to that of the EU27 average while Innovation Leaders including

The analysis for Ireland indicates that the areas where Ireland scores less well when compared with EU28 relate to Innovation Investments by firms, Intellectual Assets and Finance and Support (that captures R&D expenditure in the public sector as a percentage of GDP). The relatively high economic output effects reflects our foreign direct investment base - nevertheless, we are aware that there remains significant potential to increase the numbers of foreign owned enterprises that engage in innovation here. A deficiency in one or more of these dimensions will have a detrimental impact regardless of the fact that the other factors are in place. The evidence indicates that enterprises in countries that are innovation leaders benefit from operating within a balanced innovation ecosystem, delivering higher overall economic impact.

While we need to focus on addressing these specific dimensions, what differentiates the Innovation Leaders and Innovation Followers is the consistency of their performance across *all* eight of the composite dimensions – as well as the strong interplay between them, pointing to an effective ‘systems’ approach.

### A systems approach

The ‘systems’ approach requires not only that the different dimensions as set out above are in place, but also that there is a strong interplay between all of the elements and related actors. Many advanced economies across the OECD are increasingly adopting a systems approach to innovation<sup>230</sup>. Some of the defining aspects include the fact that:

- innovation policy measures and strategy development are increasingly being recognised as a *cross-government* agenda<sup>231</sup>;
- procurement is a growing area of importance. Here, public policy has focused on promoting RD&I in public purchasing decisions to support and encourage new innovative goods and services and a number of jurisdictions have introduced Small Business Innovation Research (SBIR) type initiatives<sup>232</sup>; and
- addressing national strategic and societal issues is currently one of the most active policy areas amongst comparator OECD countries. This ‘grand challenge’ led approach accords

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Denmark, Finland, Germany and Sweden have innovation performances more than 20 percent above the EU average

230 Based on an analysis of OECD Science, Technology and Industry (STI) Outlook 2014 - the countries included in this analysis were Sweden, Denmark, Finland, Netherlands, Belgium, Israel and New Zealand

231 In Sweden the recent national innovation strategy (2012) was based on a cross-ministerial process. Finland’s strategy recognises the inter-linkages and responsibilities of all the public organisations involved in innovation policymaking and implementation. The development of Ireland’s SSTI (forthcoming) involved an Interdepartmental Committee in its formulation, and will require continued coordination across Government Departments in its implementation

232 The US introduced an SBIR type initiative in 1982, UK in 2001 (re-launched in 2009), Northern Ireland (2013), Wales (2013) and Scotland (2015). Other examples include Japan and the Netherlands. SBIR involves the purchase of research by a Government entity which is undertaken with the objective of stimulating innovation that the contracting authority or some other party may benefit from at a later stage when goods or services not currently available are developed from the outcomes of the research

with EU's Horizon 2020<sup>233</sup> and necessitates a more progressive and coordinated approach across government<sup>234</sup>.

In terms of a challenge based approach, the contention is that a focus on specific grand challenges will bring together resources and knowledge across different fields, technologies and disciplines. Government can play a key partnership role by establishing the mechanisms to stimulate enterprise engagement in addressing 'grand challenges' with the ultimate objective of enhancing standards of living for all, facilitating enterprise growth and creating jobs. Through investments in RD&I and by engaging in collaborative approaches, enterprise can deliver innovative products, processes and services to address national policy objectives in areas such as environmental sustainability, improved healthcare, smart ageing, transport and smart city infrastructures etc. Horizon 2020 places a focus on innovation-related activities, such as piloting, demonstration, test-beds, and support for public procurement and market uptake – translating research into new products, process and services and ultimately into job creation.

## Grand challenges - strengthening Ireland's systems approach

In terms of the comparative performance of our national innovation system, we need to improve in relation to innovation investments by enterprise, finance and support for RD&I and intellectual asset creation in order to realise greater impact. We need also to strive toward a fully functioning systems approach through the alignment of purpose, strategy development and implementation across government departments, optimising state resources and realising synergies<sup>235</sup>.

Our aim is to strengthen our overall national innovation system, and to bring innovative approaches to bear in doing so – acknowledging the strong partnership role between government and enterprise (and including research institutes and HEIs) that could deliver greater outcomes overall.

A partnership approach between Ireland's foreign direct investment base, Irish owned enterprises and the research community is already seeding platforms for innovation – but these need to be scaled to deliver greater economic impact. We now have the potential to develop a differentiated systems approach with investment focused on translation, applications development and pre-commercial deployment of innovative solutions.

In this context, government can play a key role in stimulating opportunities for innovation with enterprise through its public procurement practices or by taking a 'grand challenge' or national priority approach to 'creating' markets, test bed infrastructures etc. The EU's Horizon 2020 (Framework Programme for Research and Innovation 2014-2020) highlights the role of research in addressing societal (grand) challenges – identifying this as one of its three core themes or

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233 Horizon 2020 is the EU's financial initiative aimed at securing Europe's global competitiveness and job creation through investment in coordinated research aimed at addressing societal challenges

234 A number of approaches are evident in the comparator countries including the Netherlands Top Sectors programme, the UK's Innovation Platform model, Denmark's Inno+, and Sweden's Strategic Innovation Areas

235 Technology Ireland (led by DJEI) has played a key role in driving the science, technology and innovation agenda, delivering a cohesive approach across the enterprise development agencies (IDA, EI and SFI) and the higher education institutes

pillars: excellent science, industrial leadership and societal challenges. Such a challenge-centric environment will open new possibilities to establish Ireland as a preferred source of, and base for, intellectual value, talent and innovation and to deliver more impactful economic, societal and sustainable outcomes.

Public procurement provides an opportunity to create a marketplace for enterprises to win contracts with innovative approaches which can serve as commercial reference points for competing in overseas markets. Ireland first launched its Small Business Innovation Research (SBIR)<sup>236</sup> initiative in 2014. The SBIR operates under EU Pre-commercial procurement rules and facilitates both the public sector (in terms of finding innovative solutions to address specified objectives) and the enterprise in terms of providing a lead customer and accelerating technology commercialisation. The Action Plan for Jobs 2015 has set out an action to expand SBIRs to two new contracting authorities - an action that is assigned to Enterprise Ireland to deliver, but which (in reality) requires commitment from other public sector bodies. It is our role in government to promote the use of SBIR where relevant in our procurement practices and that of our associated agencies, authorities and/or bodies.

In Ireland's context a 'grand challenge' approach could be introduced to address national priority areas including for example, sustainable agri-food, healthy ageing, smart cities etc. The ambition will be a shared common objective of government, higher education and public research, industry, and the investment community, focused on projects of scale and significance in a global context that excite and attract leading talent nationally and internationally. Such an approach will require considerable change across government, a degree of managed risk taking, and a strengthened awareness of the opportunities and benefits arising from services and business process innovation (in particular). Nevertheless, such an approach can be informed by international experience and/or pockets of existing activity already underway here. The grand challenge approach is also being considered as part of the forthcoming new Strategy for Science, Technology and Innovation.

The principles for defining the specific initiative would have regard to: Ireland's national policy priorities, focused on areas where we can leverage existing research and enterprise strengths that can differentiate Ireland and raise our profile internationally; and facilitating cluster development of scale involving cross sectoral collaboration and inter-firm relationships (including both Irish and foreign owned, large and small scale entities). The National Clustering Initiative detailed in the next Chapter would provide a vehicle through which the grand challenge approach can be progressed<sup>237</sup>.

The overarching outcome would deliver benefits for:

- government - in terms of efficiencies, better utilisation of resources, better outcomes and realisation of objectives and longer term sustainability;
- enterprises - in terms of market testing and validation for products, services and solutions; access to GVN's for Irish owned enterprises; reference/demonstration sites for

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236 Launched by SEAI in collaboration with ESB Innovation and Enterprise Ireland, to develop a smart technology solution for charging Electric Vehicles (EVs) in shared access parking areas  
<http://www.seai.ie/SBIR#sthash.ysZqhfdA.dpuf>

237 See also 'Clusters and clustering activities' - Section C - Connectedness



when selling into international markets and enhanced collaboration; international visibility and strong demonstrator effect for the attraction of talent and FDI;

- society - in terms of e.g. better healthcare and health outcomes, improved transport management and a better quality of life and living environment; and
- the economy – in terms of job creation, exports and economic growth.

Overall, the outcomes from a challenge-centric approach has the potential to put Ireland on the pathway to offering viable innovations to solve problems of global significance in a world that is highly connected, and with increasing demands on areas such as sustainable health, food and energy.

We need to further stimulate investments in RD&I activities, and acknowledge that a range of approaches and initiatives will be required to address a number of identified challenges in that regard. The next sub-section sets out our objectives and the attendant challenges that we aim to address in order to stimulate a truly innovative enterprise base.

## The enterprise objectives and challenges

Our ambition by 2020 is to:

- win €3.6 billion in RD&I investments and have 145 (44 percent) more foreign owned entities engaged in RD&I activities<sup>238</sup>;
- have over 1,000 Irish owned companies investing over €100,000 per annum in RD&I; and 220 investing over €1 million;
- increase the proportion of SMEs introducing product or process innovations (as a percentage of all SMEs), from 35 percent to 45 percent; and
- increase the number of research collaborations between enterprise and HEIs/Public Research Organisations by 25 percent, focusing on the quantity, quality and impact of these research collaborations.

### Increasing the number of innovation performers in the foreign owned sector

The foreign owned multinational sector in Ireland accounts for the largest proportion of overall BERD in Ireland and we boast one of the largest proportions of BERD arising from multinational companies amongst all OECD countries. This is testament to the success of IDA Ireland and other agencies in securing innovation-focused inward investment.

Nevertheless the majority of multinationals based here do not (formally) undertake RD&I activities in Ireland. In its recently published strategy, IDA Ireland has set out the objective to achieve greater R&D investment by their client companies. They have set out an ambitious target to win a cumulative €3 billion in RD&I and to encourage an additional 120 entities to engage in R&D over the period to end 2019. Today foreign owned (agency supported) entities invest €1.4 billion annually in RD&I.

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<sup>238</sup> This is IDA Ireland's current target to 2019 (€3 billion) set out in *Winning: Foreign Direct Investment 2015-2019*, IDA Ireland. 2015, extrapolated to 2020, bringing the ambition to €3.6 billion

There are challenges in realising this ambition, not least because the decision-making powers with respect to RD&I are, for the most part, controlled outside of Ireland. Multinationals are likely to have pre-existing/incumbent R&D sites and other sites acting as internal competitors for future investment.

In this context the Ireland proposition needs to be compelling, and aspects such as international rankings, international visibility of scientific and technological excellence, and the availability of talent are critical if we are even to be considered as a possible location of choice for RD&I investment.

### **Broadening and deepening the RD&I activity in Irish owned enterprises**

Despite the fact that there has been an increase in the number of enterprises engaging in RD&I, the reality remains that there is a high proportion of Irish owned enterprises across the economy that do not undertake any RD&I activities. Even in cases of those that are engaged, the levels of investment in innovation remain low.

A study undertaken by the OECD highlighted that the innovation activities undertaken by Irish owned enterprises tend to be focused on wider innovation - aimed at improving management and business strategy changes - and/or on innovations that are 'new to the firm' as distinct from 'new to the market'<sup>239</sup>. This is not to dismiss the fact that a proportion of Irish owned enterprises are highly innovative and have secured leadership positions in the markets they serve. However, it does highlight both the challenge and the opportunity we have to stimulate greater investment in technological innovation that leads to the development of new products, processes and services that will deliver greater economic impact. A high proportion of Irish owned enterprises are small, and the challenges facing them are similar to those found in other countries<sup>240</sup> – namely the lack of capacity to innovate and to absorb innovations.

Absorptive capacity is defined as the ability of an organisation to identify, value, assimilate and apply new knowledge<sup>241</sup>. Absorptive capacity is cumulative in that experience and prior knowledge within an organisation enables them to be more receptive to adding new understandings and new ideas. Building this capacity within small enterprises can pose a real challenge and may be considered somewhat of a 'chicken and egg' situation. This is discussed in greater detail below.

Other constraints to engaging in RD&I may relate to access to finance<sup>242</sup>, lack of awareness of what supports are available, and/or of the role that established research institutes can play. For example, the Gateway network is of direct relevance to enterprises focused on applied R&D and a recent review has seen a significant increase in the use of this resource by enterprises since the programme was launched in 2013 and promoted effectively since then. Despite some progress being made, there is still evidence of the considerable challenge faced in stimulating increased interaction and collaboration between SMEs and the range of research infrastructures available throughout the country (see below).

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239 Policy Questionnaires on Science, Technology and Industry Outlook 2014 (various country responses) OECD, 2014

240 Ibid

241 Cohen and Levinthal (1990) pioneered the concept of absorptive capacity

242 See also Section E on Funding Environment

We need also to ensure that our R&D tax credit regime is continually assessed to ensure it is internationally competitive, is understood by Irish companies and is supportive of innovation in new areas of activity (including for example, services, workplace and collaboration). The application of the R&D credit needs also to account for the different innovation processes involved in these newer areas and the supporting documentation that may be retained by the enterprise.

### Strengthening collaboration

Strengthening collaborative links between enterprises and between enterprises and the HE sector remains a challenge for Ireland in support of enterprise innovation. Although some progress has been made over the past decade, the specific challenge for Irish owned enterprises in particular is linked to the issue of absorptive capacity as discussed above.

Limited pre-existing R&D activity and capability may result in a lack of awareness of who to collaborate with (so-called 'know-who'), as well as a lack of confidence and expertise to undertake and make sense of RD&I results (so-called 'know-how'). This challenge is potentially more acute for smaller Irish owned companies who lack financial resources to employ specialist staff<sup>243</sup>.

HEIs themselves have a critical role to play within their regional environs, positioning themselves as a 'magnet' or centre that facilitates networking, idea generation and information sharing; stimulating local innovation networks; up-skilling employees in companies in their locale; and making facilities available for enterprises to undertake RD&I. There are a number of initiatives underway that are set out in the previous section (place-making) that should go some way to address the challenges for Irish owned enterprises who want to innovate.

In relation to foreign owned entities, the evidence also shows relatively low numbers reporting links to the higher education sector<sup>244</sup>. The collaborative RD&I challenges relate to a number of factors such as the locus of control of their RD&I activities, the potential lack of a local remit to engage in collaborative activities, the tensions that may present in relation to Intellectual Property rights as well as the fact that the Ireland based entity can access RD&I expertise from within their wider group of affiliates rather than seek external collaborators. The US multinational cohort based here contend that for Ireland to attract substantial foreign R&D investment it must further develop centres of scale, surrounded by an effective eco-system focused on translation, application and enterprise development - stimulating linkages and clustering activities of international visibility<sup>245</sup>. They also contend that the development of an internationally significant 'challenge centric' flagship approach that addresses a national challenge (with visible and measurable impact) and that draws from a range of disciplines would be a key part of the type of compelling proposition now needed to differentiate Ireland as a location of choice.

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243 Knowledge Transfer Ireland provides a web portal through which enterprises can identify and link with potential researchers of relevance to their needs, <http://www.knowledgetransferireland.com/>

244 Haugh, D. (2013) From Bricks to Brains: Increasing the contribution of knowledge-based capital to growth in Ireland, OECD Economics Department Working Papers No. 1094. <http://www.oecdilibrary.org>

245 Based on the submission received from American Chamber of Commerce Ireland in response to the DEJI Consultation with Regard to the Formulation of a Successor to the Strategy for Science, Technology and Innovation

The supply side in Ireland also presents challenges for the strengthening of RD&I collaborations and knowledge transfer. A recent review undertaken by DJEI concluded that although there has been considerable progress made in terms of developing Ireland's RD&I infrastructures, there is currently unmet demand for research services especially in upper-middle and high Technology Readiness Levels<sup>246</sup> (TRL) areas. Market-focused RD&I services such as consultancy, contract research (for example, for testing and certification) and short-term applied contract research (including demonstration) is not provided on a significant scale to industry by the existing research centres<sup>247</sup>.

It is estimated that currently Irish based companies spend about 37 percent of their outsourced RD&I outside Ireland<sup>248</sup>. At the same time, Irish research centres attract relatively little investment from abroad, creating an RD&I trade deficit for Ireland. If Ireland is to boast an internationally competitive research ecosystem, and to realise the policy objective to stimulate increased RD&I activity by enterprises based here, we need to build capacity in these areas while sustaining existing levels of investment in building our scientific excellence. Addressing this issue is key if we aim to considerably strengthen our capacity for collaborative research, to leverage state investment in scientific excellence and to accelerate economic impact. This could be achieved (to some extent) by evolving and strengthening the existing research centre base.

#### A changing enterprise structure - innovation in services and business processes

Manufacturing and *the making of things* will remain a fundamental component of Ireland's enterprise policy. Manufacturing is a key driver of innovation, provides a strong base for attracting more foreign direct investments in RD&I activities, and is core to the provision of customer centric solutions<sup>249</sup>. That said, the increasing contribution to economic growth from services is likely to continue over the coming decade and we need to ensure that our policies are attuned to the different characteristics of services activities.

Innovation in Services and Business Processes (ISBP) is one of the national priorities identified in Ireland's National Research Prioritisation Exercise. It is absolutely critical that our policies adapt to facilitate and stimulate innovation in services. Services innovation is difficult to define largely because of its intangible nature - broadly speaking service innovation is new or significantly improved service concept that is taken into practice. A service innovation includes replicable elements that can be identified and systematically reproduced in other cases or environments. Service innovations include, for example, new solutions in the customer interface, new distribution methods, novel application of technology in the service process, new forms of operation with the supply chain or new ways to organise and manage services<sup>250</sup>. Service

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246 Technology Readiness Levels are a measure of the maturity or proximity to market of a technology. Lower TRLs (1-3) include demonstration of basic principles through to proof of concept. Medium TRLs (4-7) span technology validation and prototype demonstration and higher TRLs (8-9) refer to pre commercial deployment up to market introduction

247 Only businesses in the sectors served by Tyndall, NIBRT and Teagasc have access to such services, this issue was also highlighted in *Making it in Ireland, Manufacturing 2020*, Forfás, 2013

248 The spend by Irish-based enterprises on outsourced RDI is estimated at €765 million in 2013

249 See also, *Making it in Ireland, Manufacturing 2020*, Forfás, 2013

250 Tekes: Finnish Funding Agency for Technology and Innovation

innovations encompass non-technological elements and generally require structural change involving new technological, human or organisational capabilities of the service organisation<sup>251</sup>.

The process for innovation in services differs in a number of respects from research typically carried out in HEIs, although innovation in services might draw from relevant research undertaken by them. For example, the timescale for research is much shorter, end users (customers) are typically centrally engaged in a more iterative process, and the research is multidisciplinary in nature. Services innovation draws from research in a broad range of disciplines, including for example behavioural analysis, ethnography, artificial intelligence, data analytics as well as sensor and information and communications technologies.

Innovation in services and business processes can have a transformative impact and not only for businesses - delivering increased value added and competitiveness for business, tangible economic impact, increased efficiencies and reduced costs for public services, and wider societal benefits (e.g. improved healthcare services and outcomes).

Internationally, policy for this type of innovation is still very much an evolving area. There is a wide variety of government approaches and initiatives in terms of scope, policy priorities, available resources, the stakeholders engaged, as well as the mechanisms and instruments used.

Because of the multi-disciplinary, iterative approach involved in the process, a 'grand' challenge approach may be the most appropriate to deliver high visibility demonstrators with potentially high impact that will be realised across the economy. Additional (and complementary) action should focus at directly supporting enterprises to engage in services innovation by putting in place an initiative that caters to the different approaches/concepts inherent in service innovation. Enterprise Ireland has recently introduced a pilot initiative in this context<sup>252</sup>, and we will maintain a watching brief on the initiatives being delivered by other innovation leading countries and to assess their relevance to Ireland's context.

### Ensuring availability of talent

We have identified talent as one of the key areas in which Ireland can differentiate its economy over the coming decade. We will place an emphasis on developing, attracting and retaining the people that are core to delivering on our enterprise policy ambitions – underpinned by innovation and productivity (Refer to section C – Differentiators: Talent).

It is people who innovate. It is people who drive excellence in scientific research. Our investments in building Ireland's research capacity over the past decades has been delivering the talent required by the research community and innovative enterprises today and includes: the Programme for Research in Third Level Institutions (PRTL) which involves investment in infrastructures and human capital aimed at strengthening national research capabilities; SFI investments that deliver 4<sup>th</sup> level graduates and highly skilled researchers<sup>253</sup>; and the Irish Research Council that funds early stage career researchers across all disciplines.

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251 Service Innovation, Performance and Policy: A Review, van Ark, B. and den Hertog, P., Ministry of Economic Affairs, 2003

252 Business Innovation initiative

253 SFI delivers a range of programmes including investments in National Research Centres (Hub and Spoke model) and those aimed at developing early and mid-career researchers incl. Starting Investigator Research Grant (SIRG), Career Development Awards (CDA) & President's Young Researcher Award (PIYRA)

The National Strategy for Higher Education to 2030 reaffirmed the fundamental importance of excellent teaching, quality in research and knowledge transfer and effective engagement between higher education and society<sup>254</sup>. Over the coming decade, we need to ensure that we provide a sustainable supply of researchers to meet the future needs of industry and to continue to deliver excellence in the research community. While the evidence shows that there has been an increase in the numbers of researchers working in Irish and foreign owned enterprises here in Ireland<sup>255</sup>, there has been a decline in the numbers of PhDs coming through the system. Our new Strategy for Science, Technology and Innovation will consider the actions necessary to redress this issue taking into account the ambition set out in this Enterprise Policy 2025.

In addition to developing our own people, we also need to continue to attract talent to Ireland, and particularly in areas that align with our national priorities for enterprise development, and where we can build international visibility and scale in our research base.

### Intellectual property

Internationally, recent studies show that 39 percent of total economic activity and 26 percent of employment in the EU is generated by Intellectual Property (IP) intensive sectors, and jobs in these sectors enjoy a wage premium, with 40 percent higher remuneration compared to non-IP intensive sectors<sup>256</sup>. The growing significance of IP is reflected in the more multi-faceted uses of IP for business purpose. The use of patents has extended from the traditional 'insurance premium' to cover income generation (out-licensing), marketing functions, enabling collaborations (e.g. open innovation) and attracting investors. IP instruments include patents, trademarks, copyrights, industrial design and trade secrets. IP management and exploitation has become a decisive success factor for business in many innovative sectors.

A recent analysis of IP activity in enterprises in Ireland indicates that<sup>257</sup>:

- activity in formal and registered IP is low in Ireland relative to selected comparator countries - although economic structure is a factor. Trade marks appear to be well utilised among Irish based firms operating in national and international markets and the gap between the Innovation Leaders and Ireland is much narrower in this respect than it is for patents and industrial design rights;
- for IP active firms, both formal and informal IPRs are of importance across the key sectors in Ireland. Formal, unregistered IP such as copyright and trade secrets are employed across a number of sectors, and informal, unregistered mechanisms such as complexity of design and lead time advantage are regarded as important by many IP active enterprises;

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254 See also The Higher Education System Performance Framework 2014-2016, Department of Education and Science, that includes the system objective to: maintain an open and excellent public research system focused on the Government's priority areas and the achievement of other societal objectives and to maximise research collaborations and knowledge exchange between and among public and private sector research actors

255 The number of research personnel working in Irish and foreign owned firms in Ireland in 2013 was 24,785, compared with 13,950 in 2007, BERD 2014-2014, CSO Statbank

256 Intellectual Property Rights Intensive Industries in the European Union: Industry Level Analysis Report, September 2013, A joint project between the European Patent Office and the Office for Harmonisation in the Internal Market

257 Enhancing the IP Activities in the Firm Base in Ireland, An independent report by Technopolis for the Department of Jobs, Enterprise and Innovation, June 2015

- barriers to engagement in IPR use vary according to firm size and age, and are also influenced by sector and ownership. For example, for micro and small firms cost is perceived (at least) to be high, and these firms struggle with the internal capacity to manage IP. More mature firms can consider the pursuit of IP as too complicated.

The findings indicate that there is scope to improve IPR usage in firms in Ireland, and that there is most scope to help Irish owned enterprises to do more with IPR. In particular, there is a need to support the development and improvement of IP management capability across the enterprise base. The focus should be on both quality and quantity of IP and on all forms of IPR, from formal to informal and registered to unregistered. We will also place a focus on steadily increasing the usage of IPR in innovation active internationally trading enterprises with a view to deriving more economic value from knowledge generation.

	Enhancing innovation in enterprise	
	<p>Bring forward a successor to the Strategy for Science, Technology and Innovation, which will underpin the development of Ireland as an innovation economy, built on excellence in strategic areas of research, on market-driven translation into commercial opportunities of the technology and research capabilities and on entrepreneurship. Key elements of innovation policy over the coming decade will include:</p> <ul style="list-style-type: none"> <li>▪ building on existing research capacity and infrastructure, ensuring that a broad base of support is in place across the full continuum of research and including at the higher (closer to market) Technology Readiness Levels;</li> <li>▪ exploring the options for a cross government ‘grand challenges’ approach that ‘creates’ a market for innovative products and services and addresses specific national priorities;</li> <li>▪ using the State’s circa €8.5 billion procurement budget to stimulate innovation in SMEs to develop solutions to meet the needs of the public sector including through rolling-out further Small Business Innovation research (SBIR) initiatives;</li> <li>▪ ensuring that Ireland’s Intellectual Property (IP) framework remains fit for purpose and stimulating an increase in activity by enterprises across all forms of IP;</li> <li>▪ promoting innovation in services and business processing with measures tailored to the unique characteristics of this activity;</li> <li>▪ ensuring supply of researchers and human capital to underpin an innovative enterprise sector; and</li> <li>▪ promoting greater collaboration between enterprise and HEIs including increased mobility between industry and academia.</li> </ul>	DJEI
	<p>Establish appropriate governance and institutional arrangements to facilitate a cross government approach to implementation of the SSTI so as to create a dynamic, cohesive and well-functioning national innovation eco-system that delivers economic and societal impact and outcomes.</p>	DJEI



	Achieve a 30 percent increase in the number of Irish and foreign owned enterprises with innovation activities of scale, and broaden the base of RD&I activity in Irish based enterprises generally.	EI, IDA, LEOs
	Monitor our R&D Tax credit offering to ensure it has an appropriate impact on R&D activity in enterprise, is internationally competitive, is attuned to evolving enterprise sectors and activities, is not overly complex or administratively burdensome on business and to ensure clarity and consistency for enterprise.	DoF
	<p>Drive participation in EU and international research programmes in areas of relevance and impact to the economy and enterprise base so that we achieve the ambitious target of €1.25bn for Horizon 2020, led by the national support network based in Enterprise Ireland.</p> <p>Deliver the ex-post evaluation of the FP7 programme and ex-ante evaluation of Horizon2020 so that we take the necessary and appropriate actions to maximise potential and impact towards the target of €1.25bn drawdown by 2020.</p>	DJEI/EI

## Innovativeness – a mind-set, a culture and way of working

The concept of innovativeness envisages a pervasive innovation, implemented by routine across operations, involving a high degree of entrepreneurialism amongst the management team and extending across the workforce as a whole. At the level of the enterprise this innovativeness is demonstrated through certain characteristics<sup>258</sup>. These include strong leadership that is market focused, open to new ideas and demonstrates the ability to forge strong client relationships. Continuous learning is embedded within the organisation, fostering capabilities to spot and respond to opportunity. There is openness to new ideas from wherever they stem within the firm. Understanding customer needs, managing this relationship and strengthening the feedback loop into research and development will become increasingly important as companies seek to deliver customised, innovative products and services at ever shortening lead time and at the highest quality levels in an intensively competitive environment. In the manufacturing context, for example, the required responsiveness to deliver tailored solutions specific to customer needs will have implications for work practices and internal processes (involving for example, innovation in agile processes, lean principles and workplace innovation). The ability to collaborate is also relevant - and not only between enterprise and research institute, but also between enterprises.

These characteristics point to a particular culture or mind-set that is embedded throughout the enterprise. A policy focus on stimulating this mind-set change is pertinent if we wish to make a step change in the ability to innovate and to building absorptive capacity within the smaller enterprise (an absorptive capacity which cannot 'sit' with one person only).

There are a number of relevant aspects pertaining to building absorptive capacity, including:

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258 See for example: Making it in Ireland, Manufacturing 2020, Forfás, 2013; Innovation in Agency Supported High Growth Firms, Forfás, 2013; The Report of the High Level Group on Manufacturing, DJEI, 2008



- management capabilities - including the ability to identify new areas of opportunity that requires an openness to exploring networks, building relationships and accessing external capacities through scanning and collaborating;
- employees' level of education - the more education and training an employee receives, the higher his or her individual ability to assimilate and use new knowledge will be. Small enterprises can benefit from having well-educated technicians, engineers and specialists to access knowledge from outside their boundaries<sup>259</sup> - or a gatekeeper whose role it is to screen the environment for knowledge and transforming the relevant knowledge so that it can be understood by other employees<sup>260</sup>; and
- a learning culture within the organisation - organisations that create an open environment for continuous learning stimulate the continuum through from searching for new ideas through to recognising those that might lead to the creation of new products, processes or services. This gaining of continuous knowledge has a positive feedback cycle as it builds the capacities and capabilities for future innovation activity.

Absorptive capacity, once recognised and established as a system, promotes the search for new knowledge that greatly increases the capacity to make the necessary new connections for innovation to happen. We need to recognise and acknowledge that different companies are at different stages of the process of building absorptive capacity and that a broader change agenda within the workplace can start to foster creative thinking and we need to tailor our policy responses accordingly. This cultural shift is also directly relevant to the future ways of working as set out in Section C – Talent).

Changing a culture within a well-established enterprise is much easier said than done. Nevertheless there are frameworks, approaches and interventions available that will support this desired uplift in entrepreneurial and innovative attitude and openness to change in the first instance, which should go some way to initiating improved absorptive capacity.

### Embracing cultural change in the enterprise

#### Lean principles as an enabler

Although not generally 'positioned' within the context of innovation, the adoption of Lean principles is fundamentally about a change in culture and of ways of working. Over the past number of years, Enterprise Ireland and more recently IDA Ireland introduced supports for companies to enhance productivity, improve competitiveness and realise transformational change based primarily on Lean principles<sup>261</sup>.

Often Lean initiatives are interpreted as (only) about cutting costs or eliminating waste and as (only) being of relevance to manufacturing activities. However, an enhanced understanding is developing of the pervasive nature and end-to-end business implications of these initiatives that

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259 External Linkages and Innovation in Small and Medium-sized Enterprises, Rothwell R. & Dodgson M. in R&D Management, 21, 125-137, 1991

260 Absorptive Capacity – One Size Fits All? A Firm Level Analysis fo Absorptive Capacity for Different Kinds of Knowledge, Tobias Schmidt, Discussion Paper No 05-72 , Centre for European Economic Research

261 Enterprise Ireland's Lean Business Offer is tailored so that it can cater to the needs of enterprises depending on size and stage of engagement with Lean. Other systems such as Six Sigma are also mechanisms that help to reduce variability and enhance productivity and competitiveness overall

require change management expertise to harness people's commitment, attitude and capabilities. A successful transition to Lean principles is not a 'project' based initiative per se, but harnesses the creativity and problem solving capabilities of an empowered workforce. In short, it fundamentally changes the way of doing things<sup>262</sup>. This cultural shift, openness to learning, emphasis on an empowered workforce with enhanced capabilities in problem solving and applying creativity to do so establishes an environment for increased innovation.

There is emerging evidence of increasing peer-to-peer learning across companies, sectors and ownership. This type of engagement allows for 'hand-in-the-wound' information sharing across all levels of the enterprise and is also one of the more powerful tools for stimulating interest across a wider cohort of enterprises.

In the context of a changing enterprise structure, we need to consider how principles such as Lean, Six Sigma etc., can be adopted in or adapted to the service environment. Lean isn't about *manufacturing*. It is about standardising work processes to make problems visible and developing employees' critical thinking ability. Progress is being made by Enterprise Ireland in terms of engaging services based companies in its Lean programmes, with examples of operational improvements being made by the early adopters in services and software companies.

Initiatives are delivered by the enterprise development agencies, the LEOs and Skillnets tailored to meet the needs of their specific cohort. The IMDA has recently introduced a Lean initiative that also combines a mentoring element so that a company that has already embarked on a Lean journey can actively share its experiences and work with the mentee to 'smooth' the pathway. Sharing of best practice amongst the agencies, industry associations and providers should continue, with each working in concert and collectively to raise awareness, to develop and disseminate case studies and to maintain abreast of developments internationally.

### Getting companies started - innovation vouchers

The national policy objective is to stimulate greater engagement by a broader cohort of enterprises and the introduction of the Innovation Vouchers has proved to be delivering tangible results. Over 1,600 small businesses engaged in the scheme over the period 2007-2012 that encouraged them to take the first steps in innovation activities. The programme was designed to encourage a transfer of knowledge between the research institutes and the small business community. An evaluation of the programme undertaken during 2012 indicated that the programme was successful in establishing new relationships between business and academia - 61 percent of projects occurred where there had been no pre-existing relationship<sup>263</sup>. This stimulus plays a key role in raising awareness of the benefits of innovation and of where to source relevant external expertise.

The policy imperative is to stimulate more enterprises to engage in RD&I - and ever more so as our enterprises face intense international competition, including those companies that continue to trade on the domestic market and those that remain small by choice. We know that R&D may not be a realistic proposition for all when we look across the entire economy. Nevertheless,

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262 This finding was reported by 50 percent of survey respondents, with an additional 34 percent indicating that they are 'well on their way to establishing a culture of change' and the remaining 16 percent were 'at the beginning of the journey of culture change'; Evaluations of Agency Supported Business Development Programmes, Forfás, 2015

263 Evaluation of Enterprise Supports for Research, Development and Innovation, Forfás, April 2013

it is vital that at a minimum, an enterprise builds capabilities and networks to take advantage of R&D undertaken elsewhere. We need to support enterprises in adapting technological advances to their own circumstances to innovate and improve competitiveness. In some instances, companies coming together and pooling innovation vouchers to meet a common need would be a realistic proposition (e.g. retailers seeking to trade on line).

It is important to note that the issue of access to skills - both in terms of skills amongst staff or access to external expertise - was cited as a key issue to realising commercial benefits<sup>264</sup>.

### **Building capabilities in leadership and skills for innovation**

Highly proficient leadership, with ambition, vision and strong management teams is critical for establishing the environment that facilitates an innovative culture. Enterprises that have engaged in management development and/or mentoring programmes tend to outperform those that have not. There is now a broad range of options available for enterprises, through from more intense leadership programmes, to more light touch mentor services and/or peer-to-peer networks that can assist the CEO and owner/manager at every stage of the company lifecycle<sup>265</sup>. We need to continue to place a strong policy emphasis on management development across the enterprise base, and tailored to the scale and stage of the development of the enterprise.

More specifically in relation to building innovation capabilities, design thinking is a process that has been integrated more fully into innovation policies in other countries<sup>266</sup>. Design is what links creativity and innovation<sup>267</sup> - design makes ideas tangible. Designers don't just think and then translate those thoughts into tangible form, they actually *think through* making things.

The premise of design thinking is that by understanding the tools and methods that designers use to tackle problems, ideate, and create solutions that organisations will be better able take innovation to a higher level. Design thinking begins with an open approach to the people, the problem and the possibilities involved in creating innovative solutions – see design maturity ladder Figure 8. Where design is made integral to a company's business strategy it has been shown to consistently yield long term success. For example, researchers tracking the performance of the US stock market demonstrated that, over a ten year period, design driven companies outperformed the rest of the S&P index by 228 percent<sup>268</sup>.

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264 The primary issue was cited as access to finance

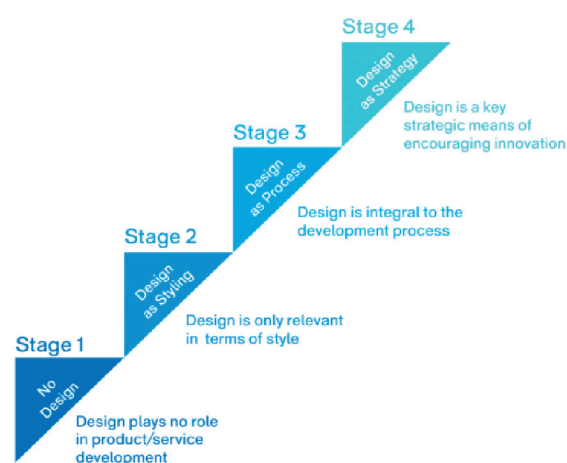
265 Including for example, Enterprise Ireland, LEOs, Skillnets and various mentor and/or start-up initiatives

266 Examples include Denmark, New Zealand, UK, Norway, Belgium as well as Ireland Source: Design Driven Innovation: Why it matters for SME Competitiveness, Northern and Western Regional Assembly, The Circa Group Europe

267 Cox Review UK, 2005, [http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/coxreview\\_index.htm](http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/coxreview_index.htm)

268 DMI Design Value Index, Design Management Institute 2013, <http://www.dmi.org>

Figure 8 The design maturity ladder



Source: Danish Design Centre

To date, Ireland's focus on design thinking has been relatively limited - although more recently Enterprise Ireland (in partnership with the IMI) has launched its Innovation4Growth programme. Design thinking is at the core of the programme. The programme is practical and involves peer-to-peer and business coaching support to help implement innovation practices, processes and culture within the company. The Centre for Design Innovation, based in Sligo Institute of Technology provides design-driven innovation services to both the public and private sector, including through the Innovation Voucher Scheme<sup>269</sup>. It is proposed that a review of this programme be undertaken on completion (post December 2016) to assess its effectiveness and to consider if and how the concept of design thinking can be more widely promoted. The proposed strategy for the Design Sector will also include a focus on design-driven innovation.

### Mobility between research community and enterprise

There is also the potential to stimulate greater strategic mobility between the research community and enterprise (and vice versa). SFI's Industry Fellowship programme facilitates the bi-directional movement of academic and industry researchers. It aims to stimulate excellence through knowledge transfer and training, thereby building critical mass in areas of strategic importance for Ireland and enabling economic and societal challenges to be tackled. The Irish Research Council's Employment Based Postgraduate Programme provides funding for companies to employ high-calibre researchers to work onsite with them on product, service or process innovations<sup>270</sup>. Other initiatives such as Enterprise Ireland Graduates for International Growth provide an excellent bridge between academia and industry.

269 A mentor-led programme Innovation by Design was piloted over a two year period to 2008 managed through the Centre for Design Innovation - recommendations made at the time for a follow-on programme to be developed has not materialised to date. Source: Design Driven Innovation: Why it matters for SME Competitiveness, Northern and Western Regional Assembly, The Circa Group Europe

270 To be eligible for this programme a business should have the facilities to conduct the research and can provide mentorship to the researcher

There is the potential to consider how we might best support building absorptive capacity within smaller scale Irish owned enterprises that are at the start of their RD&I journey. There are examples internationally of such initiatives, for example only recently (in 2015) Sweden launched its programme to support personal mobility between academia and industry. The programme acknowledges the inhibiting factors are generally related to conditions of employment and views regarding what types of qualifications and experience are considered valuable in academia and industry. In this programme, the parties themselves can determine the most appropriate practical arrangements regarding the conditions of employment (e.g. sabbatical/fixed term contract/ etc.). Concepts such as the Engineering Doctorate in which a company sponsors an employee to undertake taught business and technical courses over four years are worth investigating further in this regard<sup>271</sup>.

### **The HEI and enterprise relationship - building connections locally and regionally**

The HEIs can play a much wider and proactive role in connecting with industry in their locale apart from RD&I collaboration. Relationships between industry and HEIs are fostered over a period of time, and may start small and across a much broader agenda. Some HEIs are more proactive than others, and in some cases the former industry liaison role has been supplanted by the technology liaison office, thereby 'narrowing' the potential. Having a 'go to' liaison office serves not only as a valuable information point but could also develop local and regional 'meeting place' activities - involving discussion fora on thematic areas such as skills supply-demand, sharing of best practice, raising awareness of what's available, exchanging ideas, idea-generation, showcasing, careers options etc. The DES is currently developing an initiative to establish regional skills fora aimed at fostering better engagement between DES providers, employers and other regional stakeholders in building the skills of their regions<sup>272</sup>. Enterprise Ireland is also piloting a new 'meeting place' concept and approach in a small number of regions.

Starting relationships across a broader agenda and cultivating them over time leads to other forms of partnership, awareness raising and a building of trust and addressing the 'know how' barrier that often presents for small enterprises in particular.

## **A pro-innovation supportive environment**

### **A pro-innovation regulatory environment**

The role of regulation in innovation is complex - it can either act as a barrier by creating additional costs<sup>273</sup> or as a promoter/demand of innovation through creating incentives and setting standards that lead to the production of improved products and services<sup>274</sup>. This might include, for example, environmental or safety standards that stimulate innovation in new products (e.g. for the construction sector in terms of materials and 'smart' buildings, for manufacturing in terms of materials, energy usage and emissions). The challenge for government is to make regulation increasingly pro-innovation without compromising the

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271 <https://www.tu9.de/tu9/en/1495/php>. Postgraduate education programme sponsored by Britain's Engineering and Physical Sciences Research Council (EPSRC)

272 This is set out in more detail in the Place-making chapter within Section C - Differentiators

273 Costs of regulation are discussed in Section E in the Cost Competitiveness chapter

274 Innovation Nation, UK Department for Innovation, Universities and Skills, 2008

protective role that it plays. These challenges are evident with the emergence of new and emerging sectors, activities and business models - for example, new financial products (e.g. fintech), combination products (e.g. ICT and med tech and/or pharma), or the sharing economy.

The Government White Paper *Regulating Better*<sup>275</sup> set out the six guiding principles of good regulation, namely: necessity; effectiveness; proportionality; transparency; accountability and consistency. The White Paper introduces the notion of performance based regulation by which the policy-goal or end is stressed rather than the means - thereby allowing the possibility of novel rather than prescribed solutions<sup>276</sup>. This concept is particularly pertinent (although not solely) in the context of SBIR and proposed 'grand challenge' initiatives. The Statement of Economic Regulation 2013<sup>277</sup> reviewed these principles and set out the actions required to apply them in practice.

### Standards and innovation

The setting of standards and/or their application plays an important role in the context of innovation. In the past number of years the role of standardisation as a bridge between research activities and the market has been increasingly recognised, both by EU institutions and by R&D stakeholders<sup>278</sup>. Standards create a common framework for innovation and establish the 'rules of the game' by defining common vocabularies, by establishing the essential characteristics of a product or service, and by identifying the best practice within the ecosystems. They also provide a basis for the integration of technologies into complex, innovative systems and solutions, and assist in ensuring interoperability. The translation of research results into new standards (e.g. terminology in a new area, new measurement methods, application of new technologies, organisation of innovative services, good practices etc.) can facilitate the innovation uptake on the market. Essentially standards allow faster uptake of innovative solutions and enhance the economic value of research and innovation projects.

The National Standards Body in Ireland (NSAI) is an important element of Ireland's overall innovation and enterprise ecosystem and is Ireland's gateway to standard development. As a member of the European and international Standard Development Organisations (SDO)<sup>279</sup>, NSAI has access to the current state of the art with respect to standard development. NSAI formulates standards through consultation with various interested consumer, environmental, industry and government parties. For the enterprise itself, participating in standards development alongside other stakeholders provides a tremendous opportunity in that it increases awareness, provides network opportunities as well as the potential for scientific or commercial collaboration. Companies can participate on a voluntary basis (through NSAI) as a member of a Standards Consultative Committee or international Committee, or by commenting on National and International Consultation drafts through *Your Standards, Your Say*<sup>280</sup>.

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

276 Ibid

277 *Regulating for a Better Future, A Government Policy Statement on Sectoral Policy Regulation*, Department of the Taoiseach, 2013

278 For example, standardisation is identified in the proposal for Horizon 2020 as one of the measures which will support the market take-up of innovation

279 Such as CEN, CENELEC, ETSI, ISO, IEC etc.

280 <http://www.n sai.ie>

NSAI also provides advice and supports to industry and research groups through its Standards Education and Promotion Team. It is important too, that our students are exposed to the importance of standards and standardisation during their education rather than when they enter the workforce – so that they have the knowledge, skills and competence to search for, identify and use those standards that are applicable to them (in their area of study, research or employment). In this regard, NSAI provides guest lectures to HEIs around the country as part of a national programme to provide information on how to search for and identify Standards, and on the breadth of standards which apply in their respective fields.

### Competition policy

Effective competition is a key driver of innovation, productivity and long term growth in business. In a dynamic market-place the threat of entry and the possibility of failure are strong drivers of competition for enterprises. Incumbents will either adapt or fail. Competition stimulates innovation as enterprises invest in the development of new products, processes or services. Competition also promotes diffusion of technology as enterprises seek to improve productivity by adopting processes or products which may have been developed by market leaders. Ireland’s openness to international competition provides that stimulus for many of our enterprises. We need also to ensure that our competition policies drive competition across all market sectors of the economy, as enterprises that operate in activities that are sheltered from competition have little incentive to invest in new technologies or to innovate and improve productivity performance. Section E chapter on Cost Competitiveness sets out the strategic policy action required.

	Facilitating a culture of innovativeness across all of enterprise	
	<p>Develop new approaches appropriate to the scale and capability of the firm to boost the absorptive capacity of the enterprise base and to stimulate a shift in culture and mind-set including:</p> <ul style="list-style-type: none"> <li>▪ the introduction of Lean principles and approaches to problem solving and including manufacturing and services activities;</li> <li>▪ broadening the reach of programmes catering to management development for the innovative enterprise; and</li> <li>▪ stimulating cross industry-research community mobility through for example, secondments and placements.</li> </ul>	<p>EI, LEOs, IDA</p> <p>EI, LEOs</p> <p>EI, IDA</p>
	<p>Ensure our regulatory environment remains sufficiently agile in an increasingly disruptive innovative environment to accommodate sectoral development and emerging areas of potential.</p>	<p>Various</p>
	<p>Strengthen the role of NSAI as a crucial element of Ireland’s sectoral and innovation ecosystem, by promoting the benefits of standards to the widest cross section of industry and ensuring that its focus is aligned with Enterprise Policy 2025 and informed by the future needs of enterprise.</p> <p>Raise awareness of the importance of standards in the context of RD&amp;I and encourage more companies to participate in the standards setting process.</p>	<p>DJEI, NSAI</p> <p>NSAI, EI</p>



## Connectedness

### Introduction

Connections within the business world have become increasingly complex and global, enabled by digital communications technologies, ease of travel, trade liberalisation; they are also increasingly necessary in the quest for competitive advantage and critical mass. As a small open economy, and with a far reaching diaspora throughout the world, Ireland has a strong awareness and experience of connectivity beyond our shores. We rely on our ability to connect in a range of contexts for economic development and growth - through business networks, trade and investment relationships, partnering, sourcing of talent, collaborative innovation etc.

The application of digital technologies such as data analytics, embedded sensors, social networks internet of things etc. has facilitated any time any place access to vast amounts of information and intelligence that connect businesses to customers/customer feedback, facilitate new ways of working (workplace without boundaries), and transform how businesses structure their operational footprint globally through global value networks (GVNs)<sup>281</sup>. The march of technology and its wider adoption will see a progressively smarter and connected world over coming decades and increasingly more businesses deriving competitive advantage from these evolving applications.

We have seen how the contagion effect and interconnectedness of global capital relationships turned apparently domestic banking crises into a global financial crisis. The 'emerging markets' are asserting themselves in the global economy as markets in their own right, as sources of innovation, and sources of global capital flows and making their presence felt in the global economy. There is much commentary on the next tier of emerging markets (including Mexico, Argentina, Indonesia, Nigeria, Turkey, Thailand, Philippines, Vietnam etc.)<sup>282</sup>.

Trade liberalisation has grown over the past 20 years, such as the commencement of negotiations between the US and the EU on a transatlantic trade and investment partnership (TTIP) or the potential emergence of 'ASEAN+6' an integrated regional market of 16 countries in the Asia-Pacific region<sup>283</sup>. Developments such as these create more trade opportunities, but also bring in to sharp relief the reality of intensifying global competition. While trade liberalisation has advanced globally, unintended consequences have also emerged, for example, increased technical barriers to trade. It is also the case that the EU's deep and comprehensive agreements are provoking reactions from civil society.

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281 Global value networks, also referred to as global value chains is a concept used to describe how businesses structure their corporate footprint globally, through spatial disaggregation of their value chains to take advantage of location specific advantages, e.g. market access, expertise, cost base etc.

282 See for example The Global 20: Twenty huge trends that will define the world for decades; Business Insider, <http://businessinsider.com/business-insider-global-20-2014-2014-1?op=1>, and Throwing Light on the Future: Mega Trends that will Shape the World, Sarwant Singh, Frost & Sullivan, 2011

283 Also known as the Regional Comprehensive Economic Partnership (RCEP). It includes the Association of South East Asian Nations (ASEAN) plus Australia, Japan, New Zealand, South Korea, China, India, 'Talks on ASEAN+6 trade bloc to kick off in May', L. Yulisman, The Jakarta Post, Jakarta Business, 3/1/13



And just as there are increasingly far reaching relationships spatially across the globe, there is also a continuing propensity for firms and other related actors to co-locate and to form mutually supportive relationships in clusters, based on sub-supply relationships, dynamic labour pools, innovation partnering, informal networks, joint ventures and marketing initiatives.

This focus on connectedness examines how enterprise policy can help Irish based businesses to leverage the advantages of an increasingly connected global economy to best effect for employment creation and economic growth, focusing on our trade and investment strategy, the potential offered by increased digitisation, the implications of GVN, and increasing importance of inter-firm and other broader ecosystem relationships in more localised settings as well as internationally.

## Ireland's trade imperative

Ireland's openness to trade and investment, and the relationships that we establish and build with existing and potential trade partners are critical to enterprise growth and economic performance. Trade and investment activity encompasses the export and import of goods and services, and various modes of foreign direct investment (FDI) flows (inward and outward). These headings belie what is an increasingly complex set of activities and international relationships<sup>284</sup>.

These activities are variously governed by international trade and investment agreements on a bilateral, plurilateral or multilateral basis which aim for greater trade liberalisation, regulatory convergence and greater economic integration. At the same time, a variety of barriers continue to exist and new ones emerge that hinder international trade and investment between countries. As a member state of the EU, the framework for Ireland's global trade access is set down by the EU<sup>285</sup>. For this reason, our relations with the EU and other Member States within the EU are of critical importance as the trade agenda is drafted and negotiated.

There are many factors that influence trade and investment performance in a global context, and over the period to 2025, these will continue to include: continued trade and investment liberalisation, the emergence of regional trading blocs, the growth and increasing global impact of emerging economies, and unpredictable changes in the geopolitical landscape (such as a possible British exit from the EU, international political unrest etc.).

The Review of Trade, Tourism and Investment Strategy 2010-2015 (TTIS) and the original strategy<sup>286</sup> set out the Government's overarching approach to Ireland's trade and investment promotion activities and a policy agenda in relation to the underpinning enablers including: firm level capabilities; business environment factors; and trade and investment agreements. The

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284 For example, trade in services involves cross-border supply, consumption abroad, commercial presence, and presence of a natural person (the four modes); while inward and outward foreign direct investment encompasses greenfield investment, M&As, joint ventures, and investment of sovereign wealth funds abroad

285 The negotiation of bilateral, plurilateral and multilateral trade and investment agreements is an exclusive EU Commission competence under the Lisbon TFEU (Article 207) which it undertakes on behalf of Member States. In other words, only the EU, and not individual Member States can legislate on trade matters and conclude international trade agreements

286 Trading and Investing in the Smart Economy: A Strategy and Action Plan for Irish Trade, Tourism and Investment to 2015, DJEI, 2010

following paragraphs outline Ireland's recent trade and investment performance and global developments with a medium to longer term view which are of relevance in the context of framing the next TTIS<sup>287</sup>.

### The global context for trade and investment

A fundamental factor in our trade and investment performance and the success of our strategies over the coming decade will be the external environment, including the economic performance of our main trading partners and broad global trading conditions. And while this is the case, it has also become more difficult to predict how Irish exports will respond to broad changes to global demand. Factors such as the considerable growth in services exports within our trade portfolio and also Ireland's high degree of participation in complex global value chains (see below) has contributed to a more a-cyclical relationship between our export trade performance and global demand generally<sup>288</sup>.

### World trade

World trade in 2014 is estimated by the WTO at US\$23.3 trillion<sup>289</sup>. While the level of trade remains above pre-crisis levels, growth has slowed considerably since 2011. The massive collapse in world trade in 2009 saw a sharp recovery in 2010 and 2011 with growth rates of nearly 20 percent in both of these years, followed by a relative levelling off in 2012 to just one percent and three percent growth in 2013. In 2014 growth remained sluggish with world merchandise trade stagnating (rising by less than one percent) and services growing somewhat stronger, increasing by 4 percent. According to WTO analysis, trade expansion globally will no longer far outstrip overall economic growth as has been the general pattern for decades.

The WTO is forecasting a slightly better performance for world merchandise trade in 2015 and 2016 (expressed in volume percentage terms) with merchandise trade globally growing by 3.3 percent in 2015 and 4.0 percent in 2016 (compared with 2.8 percent in 2013). Risks to these forecasts are mostly on the downside, with continued uncertainty around the global economic recovery.

### Global FDI

Global FDI has expanded dramatically in value terms over the past two decades, albeit with two major interruptions coinciding with the dot com collapse in the early 2000s and more recently with the impact of the international recession. The expectation from commentators globally is that there will be further FDI growth over coming years as MNCs regain confidence and turn record levels of cash holdings to strategic investments<sup>290</sup>. Recent data relating to global FDI continues to show a volatile picture however, as global uncertainty continues.

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287 The focus here will be on trade and investment promotion and international trade relationships. Policy priorities relating to firm level capabilities and the business environment in Ireland are covered in more detail elsewhere in this document, e.g. Section C – Differentiators; Section E – Excelling in getting the basics right

288 The Changing Nature of Irish Exports: Context, Causes and Consequences, Central Bank of Ireland, Quarterly Bulletin 02/ April 15

289 Trade Statistics and Outlook: WTO Press Release 14th April 2015

290 Global Investment Trends Monitor, No. 18, UNCTAD, 2015

In 2014, global FDI inflows declined by eight percent, having exhibited an increase of almost three percent in 2013 over 2012 levels<sup>291</sup>. Flows to the European Union have dropped from highs of \$701 billion in 2000 and over \$850 billion in 2007 to \$235 billion in 2013 although have grown again in 2014 by 13 percent to \$267 billion<sup>292</sup>, countering the overall global performance. Inflows to developing countries have remained resilient and in 2014 accounted for 56 percent of global FDI flows, reaching in excess of \$700 billion, the highest level on record. Developing Asia has been the main driver of this sustained growth in FDI flows to the developing economies.

Analysis of mobile greenfield investment projects, i.e. those that are most actively competed for by governments and investment promotion agencies (IPAs) globally, shows a gradual and sustained downward trend since 2010 in both project numbers and the associated employment generated<sup>293</sup>.

The geographical distribution of FDI mobile projects has seen considerable change in recent years with Asia in particular rising to prominence and continuing to increase its share of mobile investment activity (rising from 31 percent in 2011 to 35 percent in 2013). Europe grew its share of investments to 29 percent in 2013 (having dropped back to 25 percent in 2012), perhaps signalling return of confidence among corporate investors in relation to European economic conditions. Performance is mixed amongst European countries however. IBM data indicates that several countries in the Western Balkans (including Serbia, Macedonia and Bosnia-Herzegovina) are beginning to establish themselves as the next wave of preferred locations for companies looking for lower cost alternatives and talent pools as alternatives to the more established Central Europe<sup>294</sup>.

Looking out over the decade to 2025, Ireland's prospects for FDI will play out in an increasingly competitive environment for a reducing pool of mobile projects (at least in the short-term, based on recent trends). Ireland's recent strong performance in terms of new name and expansion FDI is particularly remarkable against this backdrop. An important consideration in relation to FDI is that international capital flows and investment can take many forms depending on the context and motivations behind investment decisions by individual firms. Increasingly, the motives for FDI are based on seeking strategic assets and capabilities which brings mergers and acquisitions (M&A) and various forms of partnering very much into the frame alongside more traditional greenfield FDI projects. Cross-border M&A activity grew by 19 percent in 2014 compared with three percent growth in global greenfield FDI<sup>295</sup>.

### World tourism

Tourism performance globally tracks economic conditions generally. The number of international tourists exceeded 1 billion for the first time in 2012 and has increased by 4.3 percent in 2014, reaching a total of 1.13 billion<sup>296</sup>. The numbers are expected to increase at a moderate rate to reach 1.8 billion by 2030<sup>297</sup>. Major emerging tourism economies, particularly

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291 Ibid

292 Ibid

293 Global location Trends: 2014 annual report, IBM Corporation, 2014

294 Ibid

295 Global Investment Trends Monitor, No. 18, UNCTAD, 2015

296 Tourism Highlights 2015 Edition, UNWTO, 2015

297 Tourism Towards 2030: Global Overview, World Tourism Organisation (UNWTO), 2011

Asia and the Pacific, are experiencing rapid tourism growth, outperforming OECD and global averages and changing the structure of the global tourism market. Between 2010 and 2030, tourist arrivals in emerging destinations (+4.4 percent a year) are expected to increase at twice the rate of those in advanced economies. Nevertheless, Europe is still expected to lead in terms of international arrivals received per 100 population in the period to 2030. The mix of highly attractive tourism destinations, high tolerance and stable political climate give Europe an unparalleled advantage in the world tourism market. Asia and the Pacific is expected to be the outbound region that grows most over the period.

The UNWTO predicts that international tourist arrivals to Northern European countries (including Ireland) will grow by an average of 1.8 percent per year from 2010 to 2030. However, the Government's Tourism Policy Statement *People, Place and Policy: Growing Tourism to 2025* includes a more ambitious target to grow overseas visit numbers from 7.6 million in 2014 to 10 million in 2025 (a 2.53 percent per annum rate of growth).

### International trade liberalisation

Trade liberalisation continues apace globally. A feature of more recent trade and investment negotiations and agreements involving the EU is that they are now typically broad in scope, involving not just the removal of import tariffs but also seek to address a complex array of trade related issues, including regulatory barriers, intellectual property rights, government procurement, the protection of innovation, sustainable development (including decent work, labour standards and environmental protection) etc.<sup>298</sup>.

Investment is now part of the EU's Common Commercial Policy and an EU comprehensive investment policy is being introduced progressively. Existing bilateral investment agreements (also known as Bilateral Investment Treaties or BITs) between individual Member States and third countries will be replaced over time by EU-wide agreements<sup>299</sup>. The aim is to support legal certainty and transparency in international investments and to assure investors that they are able to operate in an open, properly and fairly regulated business environment, both within and across a host country's borders. The proposed policy does not intend to replace the investment promotion efforts of Member States<sup>300</sup>.

The EU-Canada trade and investment agreement is the first occasion where EU-wide rules on investment were negotiated as part of a broad trade agreement. Negotiations on individual standalone investment agreements are also feasible, as in the case of China and Myanmar (ongoing). The EU also actively participates in work on international investment conducted in international fora such as OECD, UNCTAD, WTO, G7 and IMF. Economic Partnership Agreements (EPAs) with African countries can form the basis of more comprehensive trade agreements as trade relations deepen with the continent.

Following recently agreed EU free trade agreements (FTAs) with Korea, Singapore and Canada, as we look out to 2025 there are several significant FTAs and investment agreement negotiations that are expected to advance over the decade; these include:

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298 Trade, Growth and World Affairs: Trade Policy as a Core Component of the EU's 2020 Strategy, COM (2010) 612

299 Towards a Comprehensive European International Investment Policy, COM (2010) 343 Final, July 2010, Brussels. Ireland is the only EU member state that does not have BITs in place with third countries

300 Ibid

- United States – Transatlantic Trade & Investment Partnership (TTIP)
- Japan – Free Trade and Investment Agreement
- India – Free Trade and Investment Agreement
- Mercosur (Argentina, Brazil, Paraguay, Uruguay, Venezuela)
- ASEAN<sup>301</sup> – FTAs with Singapore<sup>302</sup>, Malaysia, Vietnam<sup>303</sup>, Thailand
- China – Comprehensive Investment Agreement
- Mexico – Free Trade Agreement
- Russia – Update to existing Partnership & Cooperation Agreement including trade and investment provisions (stalled).

The EU is also involved in major plurilateral negotiations such as the Trade in Services Agreement (TiSA) and the Environmental Goods Agreement (EGA). TiSA aims to open up markets and improve rules in areas such as licensing, financial services, telecoms, e-commerce, maritime transport, and professionals moving abroad temporarily to provide services<sup>304</sup>. The EGA negotiations are aimed at liberalising trade in environmental goods with discussions focused on reducing tariffs<sup>305</sup>. The EU is also participant to the International Technology Agreement (ITA) represents about 97 per cent of world trade in information technology products. The ITA provides for the now 80 participants to completely eliminate duties on IT products covered by the Agreement. Developing country participants have been granted extended periods for some products.

Besides the European agenda in relation to FTAs and other trade and investment negotiations, there is a broader global dynamic of emerging trade relationships conducted increasingly on a regional basis. According to the OECD, more than 250 Regional Trade Agreements (RTAs) that have been notified to the WTO are in force and over 30 are under negotiation<sup>306</sup>. These RTAs will result in strengthened trade relationships amongst the members and can be a stepping stone to further development of multilateral trade more broadly. They signal the emergence of strengthening regional forces in world trade and investment that present opportunities for Europe and Ireland, but also increased competitive challenges.

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301 A regional ASEAN agreement is the ultimate objective and should be achievable in the forthcoming creation of the ASEAN Economic Community

302 FTA negotiations have been completed, need formal approval by EU Commission and then agreed by Council of Ministers before ratification by the European Parliament

303 EU-Vietnam FTA negotiations are moving into a 13th round as of June 2015

304 TiSA is based on the WTO's General Agreement on Trade in Services (GATS), which involves all WTO members. The key provisions of the GATS – scope, definitions, market access, national treatment and exemptions – are also found in TiSA

305 Total global trade in environmental goods reached roughly US\$995 billion in 2012, with tariffs on some products as high as 35 percent

306 It is estimated that there are at least 100 other active RTAs that have not been notified to the WTO and remain largely outside the purview of monitoring efforts, Deep Provisions in Regional Trade Agreements: How Multilateral-friendly?: An Overview of OECD Findings, Lejárraga, I. (2014), OECD Trade Policy Papers, No. 168, OECD Publishing. <http://dx.doi.org/10.1787/5jxvgn4bjf0-en>

### Ireland's recent trade performance

At a broad level Ireland's trade and investment strategy to date seeks to grow exports and foreign earnings by value and related employment and maximise levels of inward investment and related employment and other spinoffs. It also seeks to build resilience in markets and sectors. There is a heavier emphasis on realising the potential of the indigenous cohort in terms of exports and foreign earnings since most inward investors are already well established exporters. Market diversity is an important policy consideration for both cohorts but in different ways; it is important that we are not over reliant on certain FDI source markets, while we also need to encourage Irish owned firms to diversify their market footprint to build resilience.

The Review of Trade, Tourism and Investment Strategy set some high level performance targets out to 2015 – employment creation, growth in exports, diversification of export markets, growth of tourism numbers and revenue, inward investment and revenue growth from the international education sector (see Appendix V). In the face of difficult global market conditions, Ireland's overall trade performance has remained largely positive since the recession<sup>307</sup>.

### Exports - broad trends

Ireland has had been successful in expanding its share of the world's services market in recent years, reaching 2.7 percent in 2013, up from 1.1 percent in 2000. However, Ireland's share of the merchandise and total world markets has declined since their 2002 peak of 1.4 percent. In 2013 Ireland's market share stood at 0.6 percent and 1.02 percent of merchandise and world trade respectively<sup>308</sup>.

Total exports from Ireland were a combined €214.9 billion in 2014<sup>309</sup>; the highest exports have been historically. Over the period of the TTI Strategy from 2009 to the end of 2014, Enterprise Ireland clients' exports have increased by 44 percent, already exceeding the target of 33 percent set out. This represents a continuous year-on-year increase since 2009 and is expected to continue<sup>310</sup>.

The ABSEI survey allows a distinction to be made between exports from agency-supported foreign and Irish owned companies. Both cohorts have exhibited strong growth in exports in recent years (Figure 9). The vast majority of exports by value are generated by foreign owned firms (87 percent in 2014), although the overall total is boosted by high value inputs sourced abroad, and there is also a considerable amount of movement of goods and services between foreign owned affiliates<sup>311</sup>. For this reason it is unhelpful to draw direct comparisons on performance between the two cohorts in actual value terms.

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307 Looking the enterprise base in its entirety, a relatively small number of Irish based firms actually participate in international trade. The 4,000 agency-supported firms represent just over 2 percent of 190,000 Irish based firms but contributed almost 75 percent to total exports from the State in 2013

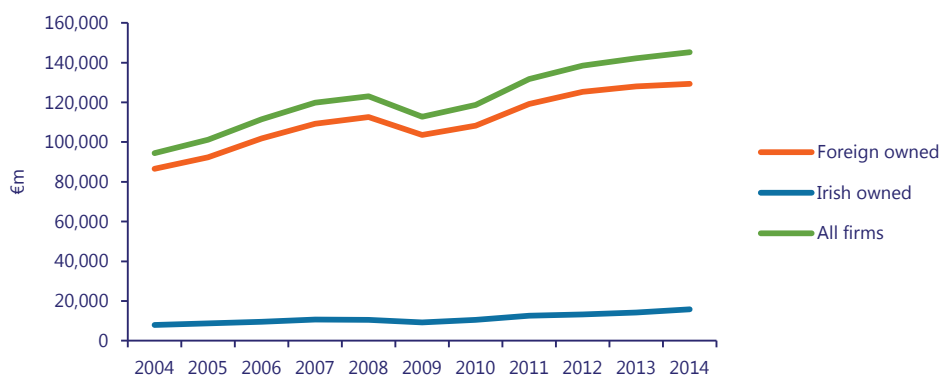
308 WTO, <http://stat.wto.org/CountryProfile/WSDBCountryPFView.aspx?Country=IE&Language=E>

309 Balance of International Payments, CSO Statbank

310 Driving Enterprise, Delivering Jobs: Strategy to 2016, Enterprise Ireland, 2015

311 For example, in exports overall, CSO Trade Statistics show that non-agricultural materials for further production accounted for 49 percent of goods imports, which signal a significant reliance on the import content in the output of industry

Figure 9 Value of total exports from agency assisted companies, 2004-2014



Source: DJEI Annual Business Survey of Economic Impact (various years) – 2014 data is preliminary

In relation to the employment performance of exporting companies, IDA is on track to exceed the target of gross 75,000 jobs by 2015 while Enterprise Ireland will exceed the target of 60,000 gross new jobs by 2016, as per the targets set out in the Review of the TTI.

### Export market diversity

The process of transformation of Ireland’s trade, tourism and investment footprint is a long-term process. Ireland’s strategy is and continues to be that of a portfolio approach which ensures resilience over the longer-term, accommodating both high growth and low growth scenarios across a range of target markets. The importance of market diversification has been brought into sharp relief in the context of currently low economic growth forecasts for the Eurozone and the possibility of a British exit from the EU following the expected referendum in the UK in 2017. The objective in future years will be to continue to increase our exports to current main markets (such as the UK) while also increasing the share of our exports to newer markets.

Overall, amongst agency assisted firms, the share of total exports going to the UK stayed relatively stable between 2010 and 2013 but in a context of a substantial growth in value terms over the period. The principal change has been a growing share of exports going to mainland Europe from 45.4 percent in 2012 to 48.3 percent in 2013.

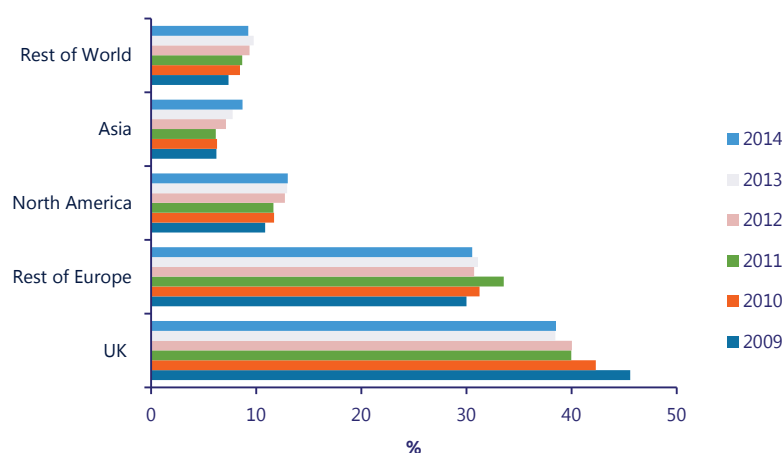
Focusing on exports from Enterprise Ireland client companies (Figure 10), the data shows that progress has been made to the end of 2014. Dependency on the UK market amongst EI clients has lessened due to growth in other markets, particularly the newer markets in Asia and the Rest of the World. Exports to the UK have continued to increase in value terms.

More detailed analysis shows that excellent progress has been made in relation to the Asia Pacific region where exports have increased by 79.6 percent from €783 million in 2009<sup>312</sup> to €1.4 billion in 2014<sup>313</sup>.

312 Enterprise Ireland Annual Report and Accounts 2009

313 Annual Business Review 2014, Enterprise Ireland (April 2015)

Figure 10 Destination of exports (Enterprise Ireland) - 2009 to 2014



Source: DJEI Annual Business Survey of Economic Impact (special calculations) Note: 2014 data represent preliminary results.

Increased diversification amongst Enterprise Ireland client company export destinations varies across manufacturing and services firms with manufacturing exports shifting towards Asia and the Rest of the World, while for services firms the orientation is towards North America and the Rest of the World. Both Service and Manufacturing firm’s exports have shown a clear reduction in dependency on the UK market. While the proportion of exports to non UK and EU markets has exceeded 10 percent for services firms, manufacturing firms exports to these destinations although growing, remains below 10 percent (Appendix VI).

Recent analysis suggests that approximately half of all Enterprise Ireland supported exporting companies export to three countries or less (49.3 percent in 2014). However, the data also shows a growing number of EI supported exporters are exporting to more than five countries over the period 2009 to 2014 - an indication of a strengthening resilience in market diversity terms. In 2014, 41.8 percent of EI assisted exporting firms exported to more than five countries compared to 33 percent in 2009<sup>314</sup> (Appendix VI).

**Sectoral diversity of exports**

At a sectoral level, Ireland's exports overall are diverse but there are a small number of dominant sectors within goods and services exports. Much of this is due to the dominance of foreign owned entities in certain sectors. Over time, exports have become more concentrated in certain sectors and there has been a decisive shift towards services in the composition of our exports overall. As discussed in Section A, some notable shifts have occurred in Ireland’s exporting base, including the expanded proportion accounted for by computer services and business services generally; and the reduced contribution made by machinery and transport equipment.

The pattern is somewhat different across foreign and Irish owned enterprises. Amongst foreign firms in 2013, the top exporting sectors in manufacturing are chemicals (54 percent), computer,

314 This data reflects only actual respondents to Enterprise Ireland’s Annual Business Report Survey (2014 is preliminary data)



electrical and optical (14 percent) and medical devices (14 percent); amongst services the top exporting sectors are computer programming (56 percent), computer consultancy (26 percent) and Other IT related services (18 percent). For Irish owned enterprises, the food sector dominates manufacturing exports (57 percent), with the remainder spread amongst a range of other sectors. On the services side, Irish owned company exports are again more broadly dispersed but with larger concentrations in business services (42 percent) and computer consultancy (24 percent)<sup>315</sup>.

It is difficult at this level of analysis to draw any conclusions about over-reliance. Data and NACE codes say little about the actual activities being undertaken within individual firms. Analyses elsewhere have explored concentration and diversity in terms of 'economic complexity'<sup>316</sup> which takes into account diversity at a much deeper level (capabilities rather than sectors). It is also important to note that any assessment of trade performance also needs to account for the linkages between exporting firms within the domestic economy which can be more broadly based than the export data appear to suggest. Exports by themselves do not reflect the full impact of these firms activities in the economy.

#### Concentration in the base of agency assisted exporting firms

In 2009, the top 1 percent of agency assisted exporters exported 68.5 percent of agency assisted exports by value. Since then, there has been a small increase in this concentration. In 2013, the top 1 percent of agency assisted exporters exported 70.1 percent of all agency assisted exports. As for 2009, there were no Irish owned firms in the top 1 percent of agency assisted exporters in 2013 (95 percent were IDA supported foreign owned companies and the remaining five percent were EI supported foreign firms (e.g. food sector). However, of the top 10 percent of exporters almost one third were Irish owned firms.

#### Investment performance – foreign direct investment

In terms of FDI, IDA will exceed its target of 780 investments by the end of 2015 as set out in the Review of the TTI Strategy and has also achieved its target in relation to investments from high growth and emerging economies in 2014 (i.e. 20 percent of new greenfield investments)<sup>317</sup>.

Ireland continues to punch above its weight, attracting more investment per capita than most other developed countries. In 2013 Ireland was ranked 10th in terms of the value of FDI inflows globally, ahead of countries such as Germany, Spain and the Netherlands<sup>318</sup>. Ranked by number of direct FDI jobs created per million inhabitants, Ireland ranked 4th in 2014 (3rd in 2013)<sup>319</sup>. Ireland has also maintained top position in 2014 in terms of countries ranked by the average job value associated with inward investment projects for the fourth year running<sup>320</sup>.

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315 DJEI Annual Business Survey of Economic Impact (special calculations, unpublished data), 2013

316 The Network Structure of Economic Output, Hausmann, R. and Hidalgo, C.A., Journal of Economic Growth, Springer, vol. 16(4), pages 309-342, December 2011

317 The investments spanned an array of markets: India (5), Australia (3), Russia (2), China (2), South Africa (1), Singapore (1), Japan (1), Brazil (1) and Israel (1)

318 Global Investment Trends Monitor, No. 15, UNCTAD, 28 Jan 2014

319 Global Location Trends, IBM Global Business Services Executive Report, 2015

320 Ibid

### FDI source market diversity

At the same time, FDI arising from US owned MNCs now account for over two-thirds of the total employed directly in agency-supported foreign owned firms here<sup>321</sup>. While maintaining this level of performance remains of crucial strategic importance, Ireland will need to continue to build diversity across a range of source markets. Ireland's performance in a European context is relatively weak in terms of share of outward projects from Japan, South Korea, China and India where there has been a substantial volume of FDI projects over the 2008-2012 period<sup>322</sup>.

### FDI sectors and activities

Analysis undertaken to inform DJEI's Policy Statement on Foreign Direct Investment in Ireland<sup>323</sup> shows that Ireland has continued to win investment and maintain a strong market share in Europe in a number of sectors and activities including: shared services, life sciences, ICT semiconductors and software, international financial services, and content and consumer business services. These investments include activities across the value chain, including headquarters, shared services/global business centres, customer contact/technical support, research and development. More recently, a focus on emerging businesses has yielded results. The analysis also pointed to areas where Ireland could potentially secure increased levels of FDI: the food and drink sector, clean technology, and to a lesser degree, manufacturing related investments in machinery/equipment/tooling and plastics/materials.

### Outward direct investment (ODI) – various modes

In addition to exporting from Ireland, Irish owned businesses are increasingly adopting a range of growth/internationalisation strategies, including greenfield investment, M&A, joint ventures (JV) and other modes. Latest data shows that 261,428 people were engaged in Irish owned foreign affiliates overseas in 2013 and generated turnover of €91.2 billion<sup>324</sup>. The UK and US combined accounted for 57.8 percent of total employment and 65.8 percent of total turnover in Irish affiliates abroad. Almost two thirds of those engaged were involved in services activities. In relation to Ireland's stock of overseas direct investment, the trend over the past decade has been sustained growth, with a dramatic acceleration during the 2008-2010 period, and strong growth again from 2012 to 2013. A similar trend is visible in the direct investment income flow data over the same period<sup>325</sup>.

The economic impact of this activity in Ireland is difficult to measure given the dearth of data available. Official statistics on overseas direct investment stock does not discriminate between that of foreign owned entities such as headquarter operations that are domiciled in Ireland and Irish owned firms, including non-agency supported enterprises, who have extended their international reach through ODI. An examination of just over 150 firms in the DJEI Annual

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321 Includes all agency supported US companies located in Ireland (IDA Ireland, Enterprise Ireland and Údarás na Gaeltachta supported companies)

322 Forfás analysis for DJEI, 2014

323 Policy Statement on Foreign Direct Investment in Ireland, Department of Jobs, Enterprise and Innovation, 2014

324 Outward Foreign Affiliates Statistics, CSO Statistical Release, 1<sup>st</sup> September 2015

325 Foreign Direct Investment, CSO Statistical Release, 12 February, 2015

Business Survey of Economic Impact provides some evidence that employment and sales gains overseas have not been at the expense of jobs and sales at home<sup>326</sup>.

Over the period to 2025 and beyond it is anticipated that Irish owned firms will continue to seek to grow their overseas footprint and sales through outward investment activity. The challenge from a policy perspective is to ensure that economic impact for Ireland is optimised.

### Tourism

Tourism activity has stabilised and is in recovery following a period of sharp decline since 2008. There were 7.6 million overseas visits to Ireland in 2014, an increase of 8.9 percent on 2013<sup>327</sup>. Revenue from overseas visitors (excluding fares) increased by 11.8 percent during 2013, and by 8.7 percent during 2014 (with values of €3.3 billion and €3.5 billion respectively), and are therefore on course to meet and probably exceed TTI Strategy targets by the end of 2015.

Outside of the main source markets which account for just under a quarter of overseas trips<sup>328</sup> Australia and New Zealand have grown visits year on year from 2011-2014. These source markets generate the highest average spend per trip (in 2014). Other countries beyond Europe, US and Australia & New Zealand also deliver a higher average spend per trip, second only to Australia and New Zealand.

A key message in the Government's recently launched Tourism Policy Statement<sup>329</sup> is the importance of maximising tourism revenue from tourism activity. Given the more lucrative spend by visitors outside of Europe a shift in the share of source markets could have a very positive revenue impact. Currently, non-European source markets account for almost 40 percent of revenue having delivered just over 23 percent of the total visitor trips. Rising disposable incomes, improved travel facilitation and an easing of restrictions on foreign travel for residents of emerging overseas tourism markets in Asia provide new opportunities for growth.

According to the Tourism Policy Statement, Tourism Ireland's marketing of Ireland as a visitor destination will be evidence based and targeted at a range of geographical and segmental markets with the highest revenue growth potential, and the evidence for these decisions will be shared with industry partners. The Policy Statement endorses an integrated model of consumer segmentation, experience based overseas tourism marketing, and visitor proposition development in order to increase Ireland's competitiveness as a destination.

### Renewing Ireland's trade & investment strategy

The Export Trade Council (ETC), chaired by the Minister for Foreign Affairs and Trade, oversees implementation of the current TTI Strategy and works to strengthen cooperation and coordination across all government departments and State agencies involved in the promotion and development of trade, tourism, investment and international education.

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326 Data in relation to internationally based activities of Irish owned companies contained in the DJEI Annual Business Survey of Economic Impact is limited and the response rate is relatively low

327 Tourism and Travel Annual Series, CSO Statbank

328 Great Britain (3,164 visits) US & Canada (1,329k visits); Germany (557k visits), France (456k visits) and Italy (258 visits)

329 People, Place and Policy: Growing Tourism to 2015, Department of Transport, Tourism and Sport, 2015

DJEI, as well as being the parent Department for Enterprise Ireland, IDA Ireland, and Science Foundation Ireland, all of who are involved in the promotion of Ireland abroad, also has responsibility for the regulatory aspects of trade, including Ireland's position in the context of formal trade and investment agreement negotiations.

A new overarching Trade Tourism and Investment Strategy will be required as the current strategy ends this year. In providing a clear articulation of where the focus of Ireland's trade activity will be in terms of sectors and overseas markets, the Strategy will facilitate a coherent in-market approach across the State agencies and bodies involved in trade, tourism and investment promotion. In framing the Strategy, an updated sectoral and market focus over coming years for trade and investment promotion, based on the analysis of sectors set out in this report, needs to be set out, along with Ireland's priorities in relation to ongoing and future trade and investment negotiations, and how Ireland can take advantage of concluded FTAs.

### Trade and investment promotion

Trade and investment promotion activity including the promotion of Ireland from a tourism perspective is undertaken by a range of Government actors, including Enterprise Ireland, IDA Ireland, Science Foundation Ireland, Tourism Ireland, Bord Bia, Ireland's Embassy Network overseas, and their parent Departments (DJEI, DFAT, DAFM, DTTAS). Under the auspices of the ETC, Local Market Teams comprising representatives of these actors and chaired by the relevant Ambassador have been formed to ensure coordination of activities in-market. A Local Market Plan (LMP) is devised on an annual basis and progress updates are provided to ETC.

The Review of Trade, Tourism and Investment Strategy (TTI) 2010-2015 segmented the 27 markets identified in the original Strategy, noting that priority markets and sectoral opportunities would vary across the individual agencies and that their resources would be allocated in accordance with their individual strategies. The segmentation defined markets that: can continue to deliver in the short-term and for the foreseeable future; markets with a more medium-term focus; and markets that may deliver over the longer-term but where immediate sectoral opportunities already exist in some cases (Appendix V).

This market segmentation approach remains valid; however it is now timely that an updated view on sectoral and market focus is formed for future years as part of a new TTI Strategy so that coordination of promotional activities in-market can be further strengthened. Recently developed agency strategies<sup>330</sup> and those currently being developed should inform the new TTI, and areas where cooperation will be undertaken need to be specified. It is also important that a mechanism be devised to monitor trade and investment performance and the effectiveness of the LMPs.

The Government's FDI policy statement highlighted the importance of leveraging the collective expertise and knowledge that is amassed in-market by the enterprise development and promotional bodies<sup>331</sup>. A well-structured approach that garners, assimilates and disseminates pertinent in-market intelligence across the agencies is required to help identify potential future

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<sup>330</sup> IDA Ireland (2019) and Enterprise Ireland (2017) have recently renewed their corporate strategies and DTTAS has recently published a new Tourism Policy Statement (People, Place and Policy: Growing Tourism to 2015, Department of Transport, Tourism and Sport, 2015). In addition, a review and update of Food Harvest 2020 was launched in July 2015 (Food Wise 2025). Bord Bia's strategy is due for renewal and the International Education Strategy is currently under review

<sup>331</sup> Policy Statement on Foreign Direct Investment in Ireland, DJEI, 2014

opportunities for Ireland and also to inform sectoral ecosystem development (see Section D - sectoral potential).

The wider variety of modes of international expansion that will become more evident over coming years (for example M&A) will have implications for how Ireland is presented as an investment opportunity and how Irish firms are appropriately supported in their expansion efforts overseas. It is important that the agencies activities in-market reflect a consistent message aimed at delivering the optimal economic outcomes for Ireland. There is also a need for enhanced metrics that capture the economic return to Ireland from a range of different investment modes and modes of business expansion overseas through ODI.

### **Trade and investment agreements and trading practices – advancing Ireland’s position**

DJEI is responsible for formulating, prioritising and advocating national policy (policy positions) in relation to international trade and investment agreements and a range of other trade policy related issues concerning such topics as regulatory convergence/recognition, tariffs and trade liberalisation initiatives. Advancing Ireland’s interests in the context of negotiation of trade agreements worldwide is done mainly through influencing at EU level.

Ireland’s export and investment performance, and the facilitation of imports, are dependent on enhanced market access and regulatory cooperation globally. In any agreement there are mutual interests involved and while Ireland would expect to gain positively from such agreements new challenges may also arise for enterprises within a more open market context.

Articulating Ireland’s interests and influencing at EU level given the breadth of activity ongoing is a challenge for a small country operating with constrained resources. It is important that our focus is guided by our trade and investment priorities, and which are also informed by an understanding of the key issues and barriers for Irish based firms already undertaking or seeking to trade/invest in third countries. This involves direct consultation with industry and other stakeholders as well as the operation of effective feedback mechanisms between agencies/bodies and the embassy network in-market to DJEI. As the EU asserts its expanded competence in the area of investment agreements it is important that any impacts to Ireland's strategic interests are anticipated and communicated at EU level.

It is critically important that when agreements are reached, firms based in Ireland are poised to take advantage of the new market opportunities arising. This requires early engagement between DJEI and the enterprise agencies in relation to the evolving negotiations to identify the potential opportunities and issues as they arise with respect to Irish based firms. It also requires ongoing engagement with industry in relation to potential opportunities and challenges. For example, the successful conclusion of the EU-Canada Comprehensive Economic and Trade Agreement (CETA) presents an opportunity for Ireland to grow trade and investment links with Canada over coming years. Promotion of the Agreement and new opportunities it presents is a priority for the Agencies and the Embassy in 2015 as part of the Local Market Plan for Canada.

Renewal of the TTIS provides an opportunity to revisit our approach in this respect more generally and to ensure that in anticipation of agreements yet to be finalised by the EU, a sustained plan with assigned resources is developed on a cross Departmental and cross-agency basis and is ready to operationalise once the agreement is in place.



economic actors increasingly connected across international borders. The concept of the global value chain (GVC) describes how different stages in the production process (in both manufacturing and services) are located across different economies leveraging the most optimal location factors appropriate to the activity or function. The more all-encompassing view of global value networks (GVNs) or global production networks highlights the significance of inter-firm, other relationships, as well as location specific ecosystem factors on the success of individual elements of a global network<sup>332</sup>. This is an important consideration from a policy perspective where an objective may exist to upgrade to higher value add activities within the global value chain or global production network.

GVNs encompass all activities of firms' value chains, including production, distribution, sales and marketing, R&D, innovation etc. with cost reduction but one factor driving the ultimate spatial configuration that emerges through outsourcing and offshoring of activities and other modes of transnational corporate expansion and functional disaggregation. The notion of fragmentation of global production is not a new phenomenon as such, but it has been growing in importance. It has attracted considerable attention internationally not only because of the implications for the growth and development of individual firms, but also because of the implications arising for the economic development of individual nation states.

From a nation state perspective, the emergence of GVNs shifts the analysis of a country's competitiveness from sectors to activities<sup>333</sup>. In this context countries will be seen to specialise in certain parts of the value chain as they pertain to a sector or a variety of sectors rather than possessing an activity base that encompasses the full end to end production process. Enterprise policy is now often seen to be guided by objectives to optimise the value captured from such specialisation, and/or to seek to upgrade or diversify the profile of activities (i.e. targeting activities engaged in different and more economically valuable parts of the value chain) that will deliver greater economic returns and resilience.

For firms, the strategic design and management of GVNs can be a vital source of competitive advantage<sup>334</sup>. For individual supplier and partner firms who specialise in certain activities, accessing the GVNs associated with multinational corporations is a necessary path to business development and growth.

### Measuring the extent of GVNs

Two measures have been used to analyse the growth of GVNs globally<sup>335</sup>. A simple indicator is that of trade in parts and components. Today, more than one quarter of world imports in

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332 See for example, *Global production networks and the analysis of economic development*, Henderson, J, Dicken, P, Hess, M, Coe, N and H Chung Yeung, in *Review of International Political Economy* 9:3 August 2002: 436–464 who describe the GPN as a framework for understanding the global, regional and local economic and social dimensions of the processes involved in many forms of economic globalisation

333 *International Comparative Evidence on Global Value Chains*, de Backer, K. and Yamano, N., OECD Science, Technology and Industry Working Papers 2012/03, OECD Publishing

334 *Capturing Value from Global Networks: Strategic approaches to configuring international production, supply and service operations*, Singh Srani, J. & Christodoulou, P., Institute for Manufacturing, University of Cambridge, 2014

335 While GVCs have been recognised for some time, measurement has been challenging. Traditional trade statistics are not detailed enough. They were designed to capture trade flows in final products,



manufactured goods are represented by intermediate imports (parts and components), having doubled in value terms over the decade to 2012<sup>336</sup>.

A more sophisticated measure is based on a recently constructed OECD dataset of trade in value added (TiVA). From this data it is possible to generate a participation index that captures the import content of exports (backward participation) and how much domestic value added is embodied as intermediate inputs in third countries' gross exports (forward participation)<sup>337</sup>. Participation in GVN represents almost 49 percent of total gross exports globally (in 2009) and has been on the increase<sup>338</sup>.

The analysis of GVN directly challenges measures of competitiveness and economic performance based on gross export figures since indicators based solely on export data of final goods might misrepresent the real specialisation of countries<sup>339</sup>.

### GVNs and services

Much of the attention and analysis of GVN is focused on manufacturing. On one level, services are less prone to vertical specialisation since face to face contact between the provider and the consumer is often a requirement. However, digitisation has played a significant part in allowing services to be separated from consumption and scaled up, creating final services with higher value added, and digitally distributed to be consumed anywhere in the world<sup>340</sup>.

There has been little research to date on pure services value chains but they exist in a range of sectors, including banking, tourism, IT, business processing, audio-visual, healthcare and education<sup>341</sup>. In services, production activities have more importance and value compared to the typical goods model that is often stylised as a 'smiley face', with the most value added in the ends of the value chain where IP is created<sup>342</sup>. This is because the production of services is intimately tied to the development, marketing and innovation activity - i.e. the concept of live development<sup>343</sup>. For services value chains generally, critical considerations in their configuration globally include liberalised ICT, telecommunications, electronic infrastructures and distribution

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while nowadays most trade is of intermediate products and is more accurately measured in terms of value added. Traditional gross measures of trade are flawed by double counting the value of intermediate goods in international transactions, World Trade Report 2014,WTO, 2014

336 World Trade Report 2014,WTO, 2014

337 Ibid

338 Ibid - based on latest data available The GVC participation index is defined as the sum of the foreign value added (FVA) embodied in a country's exports and the indirect value-added (IVA) exports (i.e. value of inputs produced domestically that are used in other countries' exports) expressed as a percentage of gross exports

339 International Comparative Evidence on Global Value Chains, de Backer, K. and Yamano, N., OECD Science, Technology and Industry Working Papers 2012/03, OECD Publishing

340 Global Value Chains and Services - An Introduction, Kommerskollegium, National Board of Trade, 2013

341 Ibid

342 That is, R&D and innovation upstream and marketing, brand & logistics activities downstream

343 See by way of example: Minecraft Brick by Brick: A Case Study of a Global Services Value Chain, Kommerskollegium, National Board of Trade, 2013



services. The facilitation of international payments is a crucial aspect, made possible by liberalised financial services. Issues relating to data transfer and differences in intellectual property protection are also extremely important<sup>344</sup>. The furtherance of international trade liberalisation in services is an important enabler of services GVN expansion and an enabler of participation in services GVNs.

### Ireland's participation in GVNs

As a small open economy and one where foreign owned and export-oriented enterprises play a relatively large role, GVNs are particularly relevant to enterprise development and policy.

A recent analysis of Ireland's exports by the Irish Economic Analysis Division in the Central Bank of Ireland has highlighted the role of GVNs in the Irish context and considered some of the implications of this from an economic development perspective<sup>345</sup>. As measured by the participation index, Ireland has a very high level of participation in GVNs (in excess of 60 percent in 2009). The CBI analysis also notes that in more recent years, the prevalence of Ireland as a net contract manufacturing user has increased and that this was a dominant feature of Ireland's export growth in 2014. Although relevant input-output data for 2014 will not be available for some time, it is likely that this activity will contribute to a higher GVN participation index for Ireland.

Ireland's high level of participation in GVNs has implications for the actual domestic value added by firms in Ireland during the production process for final goods and services. The CBI analysis finds that the percentage domestic value added (DVA) in total gross exports in Ireland is among the lowest in a selected group of our trading partners<sup>346</sup>. Along with the significant growth in services exports in Ireland the DVA embodied in gross exports of services in Ireland has fallen from 81 percent in 1995 to 53 percent in 2009<sup>347</sup>. Within Ireland, foreign dominated sectors are characterised by a high level of foreign services contribution to their goods exports - reflecting issues such as royalties and patents as well as other factors.

### Policy implications

As a small open economy Ireland's relatively high participation in GVNs will continue to be a feature, and will likely grow in importance as more indigenous firms internationalise (creating their own GVNs and participating in others). The challenge from a policy perspective is that we derive maximum economic benefit for Ireland from this participation.

The role of FDI in the Irish economy sets us apart from some of our trading partners in terms of the extent and nature of our GVN participation overall - characterised by exports with a relatively high import content. We will continue to actively seek new investment and provide a business ecosystem that attracts substantive employment creating economic activity to Ireland

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344 Ibid

345 The Changing Nature of Irish Exports: Context, Causes and Consequences, Quarterly Bulletin 02/April 15, Central Bank of Ireland, Irish Economic Analysis Division (Byrne, S. and O'Brien, M.)

346 Ireland's DVA for 2009 was just under 60 percent, whereas in the UK for example it was over 80 percent. Ireland's DVA was particularly low for services relative to a selection of our trading partners - just over 50 percent, compared with the UK, Germany, France, Italy, USA who all had DVA percentages in excess of 90 percent

347 The Changing Nature of Irish Exports: Context, Causes and Consequences, Quarterly Bulletin 02/April 15, Central Bank of Ireland, Irish Economic Analysis Division (Byrne, S. and O'Brien, M.)

and our support frameworks will continue to incentivise substance, innovation and enhanced capability<sup>348</sup>. The planned introduction of the 'knowledge development box' will be an important element in attracting and underpinning higher value add activities in Ireland<sup>349</sup>.

Services are playing an increased role in the Irish economy in both employment and export terms. As enablers of all global value chains and as global value chains in their own right, there are a number of implications for Ireland:

- The quality and cost of our infrastructures (especially telecoms infrastructures) and services that support international business relationships and trade in services need to be competitive in order to attract and maintain global business activities in Ireland<sup>350</sup>.
- The data shows that while services activity and exports have grown substantially in Ireland, there is a downward trend in domestic value add within the services export portfolio overall<sup>351</sup> and within the foreign owned segment in particular. This underlines the importance of further development of our innovation ecosystem, including our IP regime.
- The services sector is contributing significantly to the value added in Ireland's goods exports, far in excess of the average contribution globally<sup>352</sup>. This reflects the importance of royalties and patents, particularly (but not exclusively) in foreign owned manufacturing activity such as pharmaceuticals. There is limited economic activity in Ireland associated with this largely imported services component.
- Ireland has emerged as a net contract manufacturing user, ostensibly a services import, but due to accounting procedures relating to ultimate ownership the inputs and outputs relating to the final product are also counted in our National Accounts as imports and exports respectively. Contract manufacturing is a feature of international trade and Ireland is engaged as a both a user and provider. The fact that Ireland is now a net user is likely to have increased Ireland's GVC participation, with little associated substantive economic benefit to Ireland. It is important that further analysis is undertaken to understand the growing extent of this phenomenon and what it implies for the manufacturing sector and real manufacturing output from Ireland.

The gains for firms and for countries from GVC participation can be increased through upgrading of the activity base (climbing up the value ladder) towards activities with higher entry barriers and less competition. This may be achieved through process improvements, product upgrading or functional upgrading - including, for example, original design, branding and marketing<sup>353</sup>. Clustering dynamics (see below) are important for fostering functional upgrading by helping enterprises, and particularly smaller enterprises, to overcome constraints by

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348 See Section D - Role of the Agencies chapter

349 See Section E - Taxation Policies chapter

350 See Section E - Infrastructure Priorities and Cost Competitiveness chapters

351 Much of this is related to software and other ICT services (whose underlying intellectual property is held outside of Ireland)

352 The Changing Nature of Irish Exports: Context, Causes and Consequences, Quarterly Bulletin 02/April 15, Central Bank of Ireland, Irish Economic Analysis Division (Byrne, S. and O'Brien, M.)

353 The Rise of Global Value Chains, World Trade Report 2014

providing a wide network of suppliers, agents, specialised services, tacit knowledge and a pool of skilled workers.

Participation in GVN's will be the route to growth and development of many indigenous firms and emerging foreign owned business operating from Ireland; others will assume lead firm positions in the creation and management of GVN's as Irish owned and/or based multinational companies. Enterprise Ireland and IDA Ireland have worked together through the Global Sourcing initiative to explore how the strong presence of foreign owned multinationals might be better leveraged as a gateway to GVN opportunities for indigenous firms.

Emergent multinational enterprises are faced with the challenge of overcoming risk and building resilient supply, ensuring knowledge integration across different sites and functions, developing effective and environmentally sustainable 'last mile' logistics, and implementing successful M&A to support growth and restructuring<sup>354</sup>. This requires strong management competences in terms of business administration, including strategic human resource management<sup>355</sup>.

Deepening our connections with global value networks	
<p>Through the development agencies, strengthen Ireland's engagement in GVN's, leveraging our distinctive enterprise base of globally diverse foreign owned multinationals and innovative Irish owned enterprises, in order to realise accelerated growth, value add and economic impact.</p> <p>Focus on opportunities to capture increased value to Ireland from services GVN's, including the services component within manufacturing and contract manufacturing services.</p>	DJEI & Enterprise Agencies

## Clusters and clustering activities

A broad definition of clustering explains it as firms and other actors who deliberately co-locate within a recognisable geographical area and forge close linkages and working alliances to improve their collective competitiveness<sup>356</sup>. In reality the evidence shows that clusters are idiosyncratic and will vary in their configuration in terms of some or all of the following elements: geographic concentration; the core and defining specialisation; the actors involved; the dynamics and linkages that occur; critical mass, lifecycle and degree of innovation<sup>357</sup>.

Internationally, clustering is something that has been happening spontaneously over time and it is taking place on an increasingly larger scale as technological and organisational advancements permit. Today, clusters are widely accepted as an important factor for economic development

354 Capturing Value from Global Networks: Strategic approaches to configuring international production, supply and service operations, Singh Srari, J. & Christodoulou, P., Institute for Manufacturing, University of Cambridge, 2014

355 See Section C - Talent chapter (future ways of working)

356 The Cluster Policies Whitebook, Andersson, T. et al., International Organisation for Knowledge Economy and Enterprise Development (IKED), VINNOVA and The Competitiveness Institute, 2004

357 Ibid

and research has shown that the State can have a very effective role in enhancing the scale and competitiveness of clusters<sup>358</sup>.

The notion of spatial concentration is important and can be represented in the form of regional or localised concentrations as well as broader industrial clusters at State or national level<sup>359</sup>.

Clusters are not confined in terms of their internal relationships either. As discussed above, the growth of GVN's sees firms form dynamic, multidirectional, multi-layered networks both locally and across the globe<sup>360</sup>. This does not negate the usefulness of the cluster concept in its traditional sense. Rather, as we consider localised clustering in a national or regional context, the broader reality of globalisation cannot be ignored. Clusters can actually be considered as local nodes in global value chains.

### Clustering in Ireland

Ireland's landscape of clusters and clustering activity has emerged in a variety of ways and continues to evolve. It is comprised of various models and initiatives, each of which experiences different levels of collaboration, forms of composition, magnitude, scale and stage of maturity, and sustainability:

- The Enterprise Ireland Clustering Programme now in its second phase has encouraged the further development of nascent clustering activity amongst firms.
- The evolving National Research Centre and Spokes programme (funded by SFI in partnership with industry) has over time built internationally competitive research focused clusters involving academic research institutes and growing industry participation around key research agendas of national strategic importance.
- A number of industry led networks are pursuing developmental agendas for their members, for example the Irish Medical Devices Association (IMDA) an IBEC sectoral initiative, and the it@Cork European Tech Cluster which is ninety percent funded by its constituent members.
- The regional co-location of firms which is a clearly observable dynamic in sectors such as Medical Devices, Pharmaceuticals, Consumer Internet/Digital Media and Financial Services offers potential for greater levels of clustering activity. These concentrations of activity are regularly referred to as clusters but there is scope for a greater degree of on the ground collaboration and inter-firm and broader ecosystem relationships to develop.
- IDA Ireland and Enterprise Ireland are jointly progressing a 'Global Sourcing Initiative' that is focused on supporting the growth and internationalisation of Irish owned enterprises and start-ups through their participation in GVN's (via foreign multinational companies that have a presence in Ireland), as well as strengthening the business ecosystem in Ireland.

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358 The Cluster Initiative Greenbook, Sölvell, Ö., Lindqvist, G. and Ketels, C., (1st Ed.), Stockholm, Ivory Tower, 2003

359 Spatial Clustering, Local Accumulation of Knowledge and Firm Competitiveness, Malmberg, A., Sölvell, O. and Zander, I. (1996), in *Geografiska Annaler* 78B, 85-97

360 For example, *Global Shift: Mapping the Changing Contours of the World Economy* (6th edition) or *Global Production Networks and the Analysis of Economic Development*, in *Review of International Political Economy*, Henderson, J. et al, 2002

The organic development of clusters in the Irish context has been constrained somewhat by the composition of the enterprise base - for instance, although a large number of major foreign owned companies are present (which offers potential for inter-firm relationships), in many cases the Irish subsidiary does not have global, regional or functional responsibility to make significant locally based business relationships.

At best, clustering activity (as distinct from 'just' colocation) in Ireland can be described as nascent relative to other developed economies which have also used clustering initiatives as an effective policy tool for enterprise and economic development for many years. There has been wide and varied interpretation of clusters and clustering in the Irish context: sectoral concentrations have been described as clusters; strong R&D focused collaborative initiatives that compare very favourably with some strong clusters in Europe are not recognised or promoted as such; while regional clustering initiatives that have attracted significant amounts of EU funding are not necessarily connected or aligned with national enterprise policy (and may therefore dissipate after a relatively short period of time).

### Developing a strengthened national policy approach to support clustering in Ireland

Clustering ideally happens organically but cluster enabling policies have been effective in stimulating and encouraging greater levels of collaboration, with the aim of delivering greater economic impact. Research carried out by DJEI has highlighted a number of success factors in cluster building policy approaches internationally (Appendix VII).

There is already a considerable amount of clustering related activity in Ireland, both industry driven and State supported, albeit with mixed results. These need to be accommodated and nurtured in a strengthened overall approach.

A missing element in the Irish context however, with arguably the exception of the R&D focused Research Centres initiative, is the long-term sustainability of the initiatives and progression to enterprise clusters of scale and international visibility (reflective of the depth and extent of collaborative activity and not necessarily number of participants<sup>361</sup>). There is also a missed opportunity for the State to leverage existing initiatives, either industry led or those that are publicly funded to pursue key enterprise policy goals such as; increased internationalisation/GVN participation; scaling; productivity enhancement etc.; channelling State supports on a one to many basis; and providing a platform for deeper levels of collaboration amongst firms.

In summary, the key objectives of a strengthened national policy approach would be to:

- target the development of clusters on a larger scale than has been the case with other initiatives heretofore;
- seek to promote clusters which have the potential to achieve a substantial international profile or develop a specific brand in the market;

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<sup>361</sup> It must be acknowledged that clustering in the Irish context is going to be on a smaller scale in terms of participating firms and other actors given the relative size of the enterprise base compared with some European counterparts – for example, the CAP Digital Cluster in Paris has over 900 members currently

- be rooted in an overarching framework of national enterprise policy goals with reference to the policy priorities for sectoral cohorts<sup>362</sup>;
- promote a common operational model guided by best international practice;
- seek to build on existing nascent and strengthening clustering activity, building on organic market dynamics, with the State as enabler; and
- promote international connectivity of Irish clusters, exploiting opportunities on an all-island basis<sup>363</sup>, and through cluster networks in an EU context in particular.

In terms of expected outcomes, the emerging clusters will be able to drive a number of key activities and leverage a range of tools for the mutual benefit of constituent members and for the economy more broadly, including: entering new overseas markets; audits of competitiveness with counterparts overseas; driving a step change in enterprise productivity; undertaking collaborative initiatives; and gaining access to global supply chains.

In order to enhance the prospects for successful implementation, it is proposed that a new national policy approach to clustering be developed by DJEI and its agencies and trialed as a demonstrator before rollout on a wider basis. The National Clustering Initiative demonstrator will be adequately resourced from the outset and a full evaluation will be carried out on an ex ante and ex post basis before the initiative is mainstreamed. The pilot initiative will of necessity have to run for a period of time sufficient for impacts to accrue and meaningful lessons can be gleaned so that decisions relating to the future direction of the initiative can be made. The grand challenges concept outlined earlier (Section C – Differentiators: Innovativeness) which is focused on nearer to market applied RD&I is of direct relevance and the National Clustering Initiative could act as the vehicle through which this approach can be progressed.

Ongoing research on GVN has confirmed the important role that the broader enterprise ecosystem plays and including the potential to build networks between firms and a range of external stakeholders both locally and globally (research, universities, government/policy frameworks, regulatory bodies, funders, competitor firms etc.)<sup>364</sup>. Other sections of this report are therefore of direct relevance<sup>365</sup>.

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362 The thematic focus and enterprise policy goals at a sectoral cohort level are outlined in Section D - Strengthening resilience in the enterprise mix, in this report

363 Inter-trade Ireland has examined the potential for all-island clustering and a report is forthcoming

364 Capturing Value from Global Networks: Strategic approaches to configuring international production, supply and service operations, Singh Srari, J. & Christodoulou, P., Institute for Manufacturing, University of Cambridge, 2014

365 Section C - Innovativeness chapter, which includes the further development of collaborative enterprise - research system engagement; Section C – Talent chapter, including industry engagement with the education system; Section C - Place-making chapter; and Section D – Strengthening resilience in the enterprise mix chapter (advancing our policy approach to sectoral development)

	<b>Sustained clustering activities of scale and with international visibility</b>	
	Design a new approach for a National Clustering Initiative in the key sectors of strength building on the existing initiatives through competitive calls that seed cluster activities, to stimulate more extensive clustering on a sustained basis, at a scale and depth that delivers to enterprise policy goals and has visibility and stature in an international context.	DJEI & Enterprise Agencies

## Digitisation

From Ireland's enterprise policy perspective there is a need to ensure that we continue to build a business ecosystem that facilitates the growth of internationally competitive enterprises in a rapidly changing digital environment globally. Enterprises in the digital era are encountering disruptive change; the powerful fusion of creativity, technology and commerce; new ways of working; the shift from traditional business 'fundamentals' for revolutionary alternatives; and real prospects for rapid growth for some. In Ireland, as a small open economy with a young and well educated workforce, the prospects for continued growth through digital enterprise are strong. This requires a new way of thinking for enterprise policy.

Reaping the benefits of this transformation in terms of job creation and wealth generation will require action across a broad range of areas, both in the Irish context and also internationally through for example the EU's Digital Agenda for Europe <sup>366</sup>.

Rapid technology innovation in digital technologies (including mobile, cloud, data analytics etc.,) has enabled the transformation of business models, organisational structures, manufacturing processes and value chains and continues to drive a more interconnected world. Digital technologies also give rise to greater individual empowerment, itself a powerful driver of change in society, the workplace and consumer behaviour. Digitisation is pervasive in its impact, transforming all sectors of activity.

The broader application of digital technologies (e-business) within the business operations and across goods and services value chains can have a transformative impact on productivity, innovation and profitability. Digitisation can transform processes and products and achieve greater efficiencies in a variety of business transactions (including purchasing, supply chain management, stock control, marketing, customer relationship management etc.). As the European Commission has noted, 'within less than a decade, most economic activity will depend on digital ecosystems, integrating digital infrastructure, hardware and software, applications and data' <sup>367</sup>.

Irish consumers spend around €70,000 per hour online. With up to 70 percent of Ireland's annual online spend currently going overseas, efforts to enhance the engagement by Irish business with online trading are a key jobs and economic imperative. Less than one in four small

<sup>366</sup> The Digital Single Market Strategy is a key element. For the Digital Single Market rationale and proposals, see A Digital Single Market Strategy for Europe, EC Com (2015) 192 Final, available at [http://ec.europa.eu/priorities/digital-single-market/docs/dsm-communication\\_en.pdf](http://ec.europa.eu/priorities/digital-single-market/docs/dsm-communication_en.pdf)

<sup>367</sup> Ibid



businesses in Ireland are selling to customers online<sup>368</sup>. Encouragingly, Irish based enterprises have embraced online marketing through social networking websites. Ireland ranked second in the EU-28 in 2014, in terms of social media use by enterprise to connect with customers (61 per cent, compared to an EU-28 average of 36 per cent). This includes the likes of Facebook, Twitter and YouTube<sup>369</sup>.

Engagement with the online economy as a channel to the consumer (e-commerce) has become a vital component in the continued viability of businesses of all kinds and with the right skillsets and business planning has the potential to maintain and grow employment in traditional sectors such as retail. The rise in e-commerce has meant that domestic businesses face increasing global competition, but also significant opportunities for growth.

Ireland's research centres and technology centres can play a key role in driving forward digital transformation with the Irish enterprise base and beyond, including Insight – the Big Data and Analytics research centre; Connect, the centre for communications networking, services, applications and technologies; and Adapt, the centre for digital content platform research.

### Digitisation across the value chain (e-business)

For all sectors of activity, including manufacturing and services, advances in ICTs are driving change, 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 act more responsively to customer demands.

Within manufacturing for example, certain cohorts of enterprises are embracing new 'smart', 'digital' and 'virtual' models of manufacturing. For many others however these concepts seem like a far too distant (and unrealistic) future. The fact is that the pervasive use of ICTs cannot be ignored by any manufacturing firm in operation today - regardless of scale or ownership<sup>370</sup>. How they apply will be different according to individual firms' needs, strategies and contexts. For example, the smaller firm supplying to a larger player may need to adopt technologies and/or achieve certain standards if they are to remain a competitive supplier.

Recent CSO data shows some success in enhanced digital engagement; for example, Irish based enterprises are purchasing more cloud computing services for file storage and email services, at a rate above the EU-28 average in 2014, although others were dissuaded through insufficient knowledge and cost.

There are a number of policy tools available to drive greater digital adoption, including leadership and management development, lean business programmes and investment in research and development and these will continue to be promoted through the enterprise agencies.

The broader enabling environment for e-business is also critical and Ireland intends to make further progress in order to deliver a world class digital ecosystem in Ireland. Availability of a

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368 In 2014 49 percent of large enterprises had e-Commerce sales (44 percent of their total), medium enterprises 43 percent (20 percent of their total), and small enterprises only 23 percent (15 percent of their total), CSO Information Society Statistics - Enterprises 2014, available at <http://www.cso.ie/en/releasesandpublications/er/iss/informationstistics-enterprises2014/#.VV4aX9J0zcs>

369 Information Society Statistics - Enterprises 2014, CSO Statbank

370 Making it in Ireland: Manufacturing 2020, Forfás/DJEI, 2013



modern broadband infrastructure is intrinsic to realising the full potential of the new digital or online economy<sup>371</sup>. Measures to enhance digital literacy, skills and inclusion are also important (see Section C – Talent). The following aspects in particular require sustained attention over the coming decade in what is an extremely fast moving digital environment that creates new challenges and disruption on an ongoing basis.

### e-Commerce

Consumers' ability to find goods, services and better value online has facilitated access to a wider domestic and international customer base, particularly for SMEs, and scope for enhanced productivity, innovation and competitiveness. One of the objectives of the Government's National Digital Strategy (NDS)<sup>372</sup> launched in 2013 is to improve levels of engagement by Irish SMEs with the online economy. The NDS identified a number of challenges that needed to be addressed to help Irish businesses develop a meaningful online trading presence, including awareness of its potential. On foot of this it launched a 'Winning with Web' Awareness scheme to highlight the value for small business of trading on-line<sup>373</sup>.

A key initiative of the NDS, reflected in the Action Plan for Jobs, has been the Trading Online Voucher scheme, operated by DCENR, DJEI, Enterprise Ireland and the LEOs<sup>374</sup>. Its objective is to get 10,000 Irish businesses online for the first time and a further 2,000 more small businesses trading online by the end of 2015.

Developments at a European level are important to enable greater levels of e-commerce participation amongst businesses in Ireland. The cost of doing business across borders is high and this is putting Europe at a competitive disadvantage when compared with the US and Asia. The Digital Single Market (DSM) Strategy published in May 2015, aims for greater harmonisation of online consumer and contract rules across the EU-28; bringing on-stream more efficient and affordable parcel delivery; the tackling of geo-blocking, which segments markets for online services along national borders; and reduction of VAT related burdens arising from different regimes when selling across borders<sup>375</sup>.

DSM also aims to shape an environment in which digital networks and services can flourish, through the encouragement of investment in broadband and online security infrastructure, modernisation of existing telecoms and media rules, pan-European improvement of spectrum, and the creation of a robust European data protection regime. The present fragmentation of the EU's online economy discourages companies from cross-border trading and prevents consumers from benefitting from the most competitive offers. The Commission claims the DSM will help create €250 billion in additional GDP, hundreds of thousands of new jobs, and a vibrant knowledge based society.

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371 Section E – Excelling in getting the basics right

372 Doing More with Digital - National Digital Strategy for Ireland Phase 1- Digital Engagement July 2013

373 See Doing More with Digital - National Digital Strategy for Ireland Phase 1- Digital Engagement July 2013, pp.16/17

374 For an outline of the scheme and its achievements to date, see Action Plan for Jobs 2015, p.58

375 A Digital Single Market Strategy for Europe, EC Com (2015) 192 Final, available at [http://ec.europa.eu/priorities/digital-single-market/docs/dsm-communication\\_en.pdf](http://ec.europa.eu/priorities/digital-single-market/docs/dsm-communication_en.pdf)

### Data protection and data security

A robust regime for protection of personal data is essential to instil public trust in online products and services. It is also vital in helping grow Ireland's enterprise base in the area of big data and data analytics. The establishment of a world class data protection regime is a key objective of Government and has led to the appointment of a Minister of State for data protection (in the Department of Justice and Equality) in the past year. A data protection roadmap has been outlined, which explicitly targets an approach to data management and protection that is 'best in class' internationally. This includes the strengthening of the Office of the Irish Data Commissioner; and the creation of an interdepartmental committee to contribute to a whole of Government perspective on data issues, and consult with business, public sector, academic and civil society stakeholders<sup>376</sup>. As a key European hub for global digital and social media activities, Ireland's reputation in data protection, privacy and security is an important competitiveness factor in attracting mobile investment in this area.

### Driven by the EU digital single market...

Data protection reform and the strengthening of privacy rights is also a central part of the DSM proposals at EU level. A substantial data reform programme was launched in 2012 aimed at updating Europe's existing data protection directive (through the General Data Protection Regulation) for the digital age<sup>377</sup>. The aim of the reforms is to benefit enterprises and boost growth, by offering customers assurances that personal data will be treated with care and diligence.

The Commission is pushing for agreement between the European Council and Parliament on the reform before the end of 2015, to help underpin the DSM<sup>378</sup>. Because Ireland plays host to some of the world's largest content and social media multinationals who serve the European and global market, the developing agenda at EU level is of key importance.

An important strand of the reforms aims to simplify the data protection framework by streamlining the 28 different data protection laws across the EU through creation of a 'One Stop Shop', in which companies will have to deal with and be answerable to a single set of data protection rules, through a single data protection authority. Co-operation between national Data Protection Commissioners will be enhanced to ensure consistent application of rules across the EU, faster decisions, one single interlocutor and less red tape, and ensuring legal certainty. The one law and one authority approach will apply to businesses based both inside and outside the EU, offering goods and services or monitoring citizens, and therefore create a level playing

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376 [http://www.merrionstreet.ie/en/News-Room/Releases/Minister\\_Murphy\\_sets\\_out\\_Data\\_Protection\\_Roadmap\\_after\\_Cabinet\\_Decision.html](http://www.merrionstreet.ie/en/News-Room/Releases/Minister_Murphy_sets_out_Data_Protection_Roadmap_after_Cabinet_Decision.html)

377 Safeguarding Privacy in a Connected World A European Data Protection Framework for the 21st Century, European Commission, Brussels 25.1.2012 Com (2012) 9 final (also accessible at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0009&from=en>)

378 The reforms propose rights for individuals to be forgotten, to data portability, and to be informed of personal data breaches by companies or organisations; greater accountability by companies in their data processing, through statutory appointment of an independent data protection officer; making privacy by design or default settings the norm in products and services from the earliest stage of development; and equipping European regulators with strong enforcement powers, such as fining companies who do not comply with EU rules by up to 2% of their global annual turnover.

field. Another aspect of the reforms already in implementation is the establishment of a European Data Protection Board which will deal with appeals to rulings at the national level.

The EU DSM strategy also deals with data security, citing cyber threats i.e. data interception, online payment fraud, identity theft, and trade secret theft, as negatively impacting on the economy and society through disruption of services, violation of fundamental rights, and undermining of citizens' trust in online activities<sup>379</sup>. The EU is currently legislating for the Network and Information Security Directive, while its European Cybersecurity Strategy is prioritising development of industrial and technological resources for cybersecurity.

### Copyright

The development of social networking and media, and others channels of delivery for online content, has led to expectations that consumers will be able to receive legitimate content quickly, and be able to access that content from wherever they are. Against this backdrop, it is critical that a proper balance is struck between the interests of creators through appropriate protection and means of enforcement of IP rights, and access for users and consumers. Copyright law has a major role in striking this balance and must grapple with the increasingly iterative and interactive nature of innovation online.

Ireland is seeking to update its copyright law in the interests of lowering digital barriers to innovation and provide greater support for growth in the digital industry. The recommendations of an independent review committee, which reported in 2013, are currently being considered by the Government<sup>380</sup>. The Committee has suggested reform in a number of areas to modernise copyright law and develop an ecosystem that drives innovation in the online world. A number of recommendations advocate the greater use of copyright exceptions and limitations to allow for greater access to copyright works without affecting the issue of remunerating for the original creators of content.

Modernisation of the European copyright framework is being promoted through the EU's proposals for a Single Market for Intellectual Property<sup>381</sup>, and the DSM<sup>382</sup>. While the substantive scope of copyright law has been largely harmonised, rights are still licenced on a national EU-28 basis i.e. limited on a geographical basis which does not make for a harmonised approach throughout the EU marketplace. Under DSM, the Commission's proposals pledge to support measures to make it simpler and more efficient to access copyright protected works or content online, by tackling cross-border access to the protected content and its portability.

The DSM's copyright package aims to reduce difference between national copyright regimes and is expected in late 2015. Timely transposition to Irish law of any policy directives arising will be important.

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379 A Digital Single Market Strategy for Europe, European Commission, Brussels 6.5.2015 Com (2015) 192 Final, pp.12/13

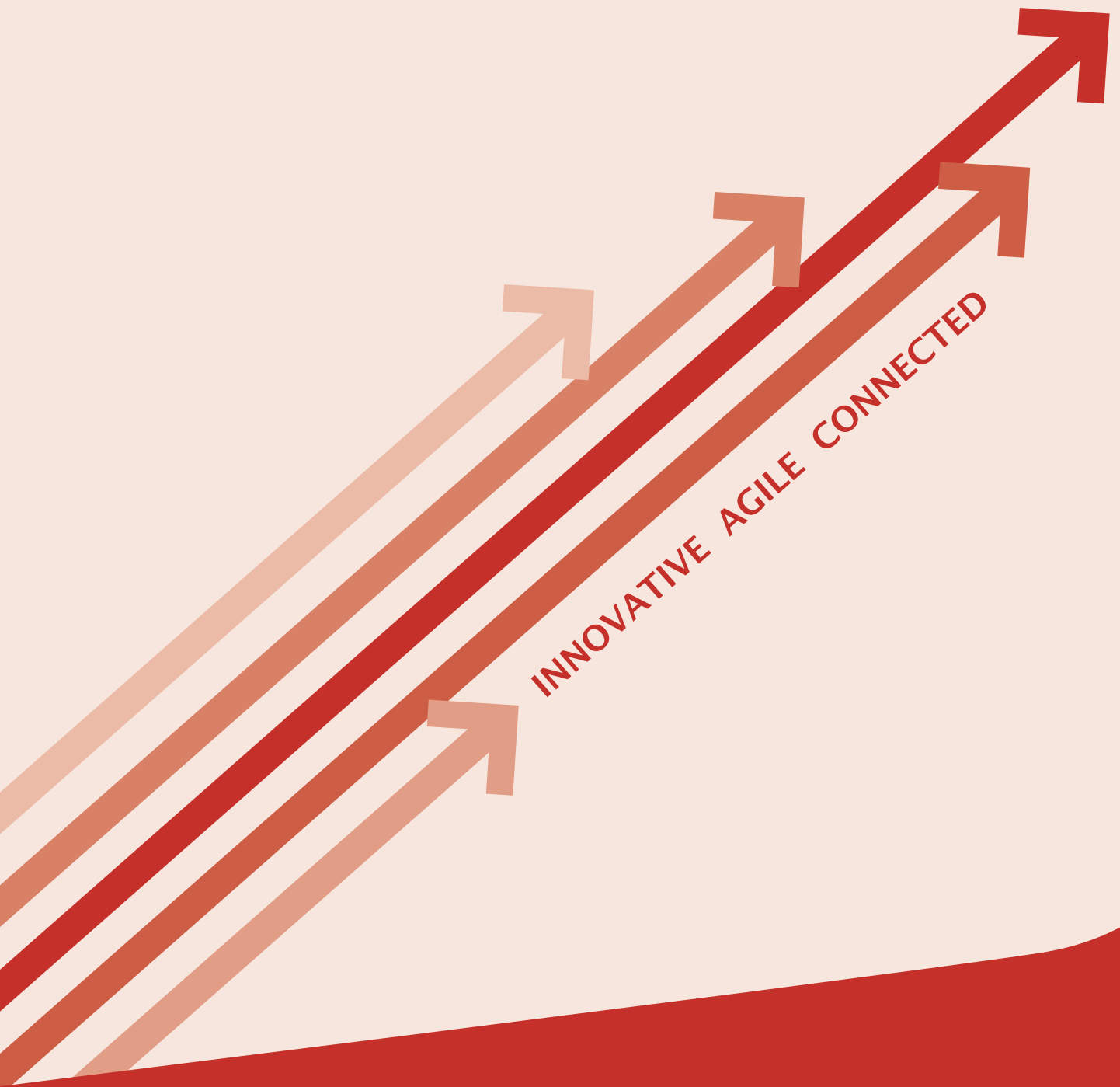
380 Modernising Copyright: The Report of the Copyright Review Committee, Dublin 2013

381 A Single Market for Intellectual Property Rights: Boosting creativity and innovation to provide economic growth, high quality jobs and first class products and services in Europe, European Commission, Brussels 24.5.2011, Com(2011) 287 final, pp.9-14

382 A Digital Single Market Strategy for Europe, European Commission, Brussels 6.5.2015 Com (2015) 192 Final, pp.6-8

	Ensuring a digital friendly regime	
	<p>Ensure that Ireland sustains its leadership position in providing an internationally recognised robust and well balanced regime for the digital economy that protects individual interests while facilitating enterprise development and growth including, through:</p> <ul style="list-style-type: none"> <li>▪ updating our intellectual property legislation to ensure that it is fit for purpose in the digital age;</li> <li>▪ close engagement with our EU partners in relation to the advancement of the EU's Digital Single Market agenda in all of its aspects;</li> <li>▪ ongoing and regular review of global and international developments and timely policy responses if/as needed; and</li> <li>▪ the full implementation of Ireland's data protection roadmap, and National Broadband Plan.</li> </ul>	<p>DJEI, DCENR, DJE, DPC</p>





# Section D

Resilience



## Strengthening resilience in the enterprise mix - a sectoral perspective

In this section we set out our aim to strengthen resilience in the enterprise mix looking from the perspective of sectors across the entire economy:

- where will growth come from?;
- a strengthened sectoral ecosystem development approach; and
- a portfolio approach to sectoral 'cohorts'.

### Introduction

We know that the Government does not create jobs. Ultimately it is people that generate ideas, establish businesses, 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.

Nevertheless, while many horizontal policies are relevant to all enterprises in the economy (as outlined in earlier sections of this report), a more in-depth understanding the challenges and opportunities facing specific sectors is increasingly required of policy makers in the face of intensified competition globally for investment.

Our analysis has demonstrated that certain sectors in the economy share similar characteristics (such as export oriented, employment intensive etc.) and can be grouped accordingly. This more in-depth understanding of sector specific needs allows us to:

- take a more tailored approach to business ecosystem development in Ireland in terms of, for example, education and skills, and RD&I infrastructures; and to
- set out the most appropriate approach and emphasis in terms of direct enterprise level interventions.

As set out in our vision, we will strengthen our resilience in the enterprise mix by taking a portfolio approach to sectoral development: recognising the valuable and different contributions that sectors and activities make to economic growth through exports, value-add, direct economic expenditures and/or employment.

We can (and should) unashamedly seek to improve productivity and innovativeness across *all* of enterprise.

We can (and should) unashamedly make choices about building on our comparative advantages and about fully leveraging smart specialisation to deepen competences that will enable us to grasp 'new' opportunities in adjacent areas.

### The evolution of sectors - where opportunities will come from

Global drivers of change produce new challenges, new solutions and new opportunities on an on-going basis. They collectively and individually have implications for how, what and where



companies across all sectors do business, organise themselves and their workforce. Successful companies and sectors are those that focus on market opportunities, assess changing customer needs, identify gaps in the market, and understand the competitor landscape and implications of disruptive forces.

The headline employment potential set out earlier in Section B does not reflect the changing dynamic within and across all sectors. It is not possible to be definitive about exactly where jobs will come from in the future, what the 'new sectors' might be and/or how occupations themselves might evolve. What is currently evident is the range of new areas of growth potential (more often than not termed as new 'sectors') that are of relevance to Ireland's enterprise policy:

*Global market segments create new areas of growth for a range of sectors.....*

- Aging populations, environmental concerns, increased affluence in emerging markets, increasing digitisation and changing consumption behaviours are driving growth in markets such as healthcare, wellness, food, green technologies as well as for more customised products and services across a range of sectors.
- 'New' high growth global market segments such as healthy ageing, smart cities, smart grids and sports nutrition present considerable opportunities. These end markets present opportunities for a range of sectors including ICT, engineering, financial services, healthcare services - and for enterprises to capture leadership positions either as individual entities or through effective collaboration.

*New sectoral opportunities will arise in a number of ways...*

- within existing broad sectors there is a range of sub-sectors and niche market opportunities including for example: mobile applications, functional foods, digital games, aviation leasing, diagnostic products – and this is a constantly evolving 'space'.
- as a business function (either as a shared services within a MNC or outsourced to an external provider) including headquarters, customer technical support, clinical trial management, sales lead generation, IP management, business process outsourcing.
- as new global business models emerge (e-tailing, the sharing economy, freemium<sup>383</sup>, software as a service, blended education and learning services).
- at the blurring edges of existing sectors as convergence continues apace (e.g. nutraceuticals, combination health products, fintech, Internet of Things, etc.).
- as a result of capturing adjacent possibilities (or diversification), drawing on core expertise and capabilities to stimulate growth in new and emerging activities and enter new end markets; for example, the transferability of capabilities and skills in textiles to composites (materials)<sup>384</sup>.

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383 Freemium involves offering content such as a digital game free of charge while charging a premium for advanced features, functionality or related products and services

384 At the level of the enterprise, this might involve for example, a plastics firm diversifying from servicing the automotive industry toward biomedical applications; or a firm with deep competence in coiled spring manufacturing technologies diversifying from the construction sector to medical devices see case study Shannon Coiled Springs outlined in Making it in Ireland, Manufacturing 2020, Forfás, 2012

- through smart specialisation strategies that facilitate entrepreneurial discovery and the emergence and early growth of new activities which are potentially rich in innovation and spill overs<sup>385</sup>.

#### *Pervasive and disruptive technologies and trends...*

- There are a number of technologies that are having a transformative impact across all sectors - primarily (although not exclusively) ICTs/digitisation and sensor technologies).
- The environmental agenda requires a response from all enterprises, and provides opportunity for many in terms of technologies, services and solutions.

Appendix VIII sets out a brief overview of some of the emerging areas of opportunity and demonstrates that many are an evolution of existing sectors and/or a combination of areas in which we have capability and/or an end market that can be served by any number of sectors in which we have strengths. The mosaic of evolving activities calls into question the usefulness of the term 'sector'. Moreover, traditional sector classifications and datasets are limited in reflecting the true extent of diversity across activities and end-markets. Throughout this report we apply the term sector as a 'catch all', aware of the breadth of activities that a so-called 'sector' may represent. The next sub-sections set out:

- the changing dynamic that will influence all sectors, activities and enterprises over the coming decade;
- advancing our approach to sectoral development; and
- sectoral cohorts - characteristics and policy emphasis.

## The changing dynamic - change is the only constant...

Because of the pervasive and fundamental impact that 'digitisation' and 'greening' will have on all enterprises, it is crucial that Ireland's enterprise policy focuses on harnessing the potential of cross cutting areas such as ICTs and clean technologies<sup>386</sup>. Increasingly we are aware of the equally pervasive and value-adding potential from design.

The implications are likely to manifest in different ways, and perhaps over different time-frames, depending on the sector in which an enterprise operates, the scale of the firm, and its own strategic objectives - but it is reasonable to conclude that each and every enterprise will be impacted to some extent over the coming decade.

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385 Policy Brief No 8, Smart Specialisation and the New Industrial Policy Agenda, Dominique Foray, EC, Innovation for Growth - i4g. Entrepreneurs are considered in the broadest sense to include innovative enterprises, research leaders in HEIs, independent inventors and innovators. Smart specialisation identifies priorities in terms of activities - based on the premise that the discovery process bridges present with future strengths of the economy

386 ICT and Clean/Green Technologies are also defined as sectors in their own right, encompassing enterprises that develop technologies and/or provide services and solutions. These are included in the commentary below

**Digitisation** is a potentially disruptive force that is already impacting all businesses and has been discussed in Section C – Connectedness. Digital connectedness, nationally and internationally is a vital element underpinning enterprise growth to 2025.

The adoption of technologies can also fundamentally alter the delivery of public services - enhance productivity and lower costs. If we take the concerted actions required in a deliberate and targeted manner, we could genuinely realise an ambition to establish Ireland as a leading edge digital location - a location that is known not only for the production of technologies, but for the innovative use of technologies within our public sector that delivers a higher standard of living for all and stimulates entrepreneurial endeavours.

It is important to acknowledge that the adoption of ICTs presents challenges too. The automation of both manufacturing and services processes (including what may have been previously deemed as knowledge intensive activities) will likely have an impact on employment intensity of activities, on leadership capabilities and skills requirements and will fundamentally change the nature of jobs and the workplace (refer to Section C – Talent, including future ways of working).

The Government has established a High Level Group to assess actions required to ensure that Ireland can take advantage of Big Data and the Internet of Things. We need to clearly set out approaches to optimise the potential of these horizontal game changers.

	Ireland a digital economy hot-spot within Europe	
	<p>Ireland will achieve a leadership position as a digital 'hot-spot' in Europe in the adoption and use of advanced ICTs across all aspects of the enterprise economy and the public sector, including initiatives as part of EU's Digital Agenda for Europe, and we will:</p> <ul style="list-style-type: none"> <li>▪ leverage on our core strengths in enterprise in ICTs (incl. supply chain management; business process outsourcing; manufacturing processes; data analytics; software development; etc.)</li> <li>▪ strengthen our ICT RD&amp;I capabilities;</li> <li>▪ stimulate adoption of technologies across the enterprise base, leveraging expertise within HEIs and public research institutes;</li> <li>▪ meet three quarters of demand for high level ICT skills through domestic supply of graduates by 2018;</li> <li>▪ ensure a favourable regulatory, IP and data security environment;</li> <li>▪ ensure the availability of ubiquitous fast speed broadband by 2020; and</li> <li>▪ use public and private partnerships with enterprise and the research community to facilitate technology and market 'test-bedding' to contribute to addressing grand challenges through innovative use of ICTs to develop new products, services and solutions.</li> </ul>	Whole of Government

**Green Technologies** The environmental sustainability agenda presents both opportunity and challenges for enterprises. The related EU Directives and regulations, diminishing natural resources, rising energy costs, and changing consumer behaviours will drive significant growth over the coming years<sup>387</sup>. The innovation and development of and/or adoption of green technologies is relevant to all enterprises to ensure that they can remain internationally competitive and meet changing demands from a number of perspectives.

For example, manufacturing enterprises are increasingly focused on product lifecycle management, on environmental impacts throughout the production process (as distinct from 'end of pipe' pollution control) and are seeking to 'green' their products through the use of novel, 'smart' and bio-materials. Energy management and efficiency, corporate social responsibility, global travel, transport and logistics, and managing carbon footprint are important considerations for all sectors and activities including data centre based services, construction, retail, tourism etc.

Both clean and information & communications technologies area also defined as sectors in their own right and have been included in the analysis in the next sub-section.

	<p><b>Taking policy actions to achieve our EU commitments and to leverage our natural resources by 2030</b></p>	
	<p>We will build on our many advantages and will enhance our reputation internationally as a sustainable and green economy, and will:</p> <ul style="list-style-type: none"> <li>▪ enhance our RD&amp;I capabilities and stimulating start-ups and growth in green/clean technology enterprises;</li> <li>▪ stimulate increased focus by enterprises on investing in improving energy efficiencies and minimising waste (including through initiatives such as Lean) and delivering on corporate social responsibility objectives;</li> <li>▪ address barriers and ensure mechanisms to realise the potential from investment in energy sourced from renewables are efficient and effective;</li> <li>▪ implement Food Wise 2025, published in July 2015, with a strong emphasis on environmental sustainability;</li> <li>▪ encourage sustainable approaches to spatial development and planning; and</li> <li>▪ progress smart city-region initiatives (which also leverages ICT capabilities).</li> </ul>	<p>Whole of Government</p>

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387 Across solar photovoltaics, wind power and biofuels, it is estimated that the global market for these sectors combined will expand from €248 billion in 2013 to almost \$398 billion in 2013 (+61 percent), Clean Energy Trends 2014, Clean Edge Inc, 2014. The EU Commission's intention to publish a revised package of Circular Economy measures before end 2015 which will aim to transform Europe into a more competitive resource efficient economy is also directly relevant in terms of realising economic and quality of life benefits for European citizens

**Design** There is an increasing policy focus, both internationally and in Ireland, on leveraging design for economic growth. Recent research has recognised the importance of design in innovation and national competitiveness. Design is by its very nature innovative - it involves examining how things work and how they can be improved, a process that continually generates new ideas and combinations. Design provides a proven competitive edge for businesses and is relevant to all sectors of the economy (see also Section C Differentiators: Innovativeness). Design for example, can create unique competitive advantages through the creation and strengthening of identities and/or brands; allow for new product offerings based on user centric design; has the potential to lower costs in production, assembly, transportation etc.

It is important that, in this Year of Design 2015, that we develop an evidence base around the importance and role for design in enterprises across the economy and to identify any barriers that may inhibit greater engagement in design. Already, ID2015 is driving momentum, including the establishment of new design networks; the showcasing of new Irish designed products, studios and companies at core events internationally, some 200 projects funded through Design Innovation Fund, and extensive social media penetration<sup>388</sup>. These will demonstrate the potential for increased collaboration with impact in-market, showing technical and design issues can be solved in a collaborative way.

	<b>Leveraging the potential of design</b>	
	Building on the Year of Design 2015, we will roll-out a strategy for increasing the application of design across the enterprise sector, including initiatives to increase the use of design-thinking and its application in, and potential to, stimulate innovation within SMEs including manufacturing and services activities.	DJEI

## Advancing our policy approach to sectoral development

Ireland's enterprise and related science, technology and innovation (STI) policy approach will increasingly move toward a systems approach over the coming decade in line with new thinking in enterprise policy internationally. We see the role of Government as a facilitator, coordinator, networker, promoter and informer in addition to investor.

Our approach will be focused on coordination across relevant government departments; strengthening institutional frameworks and structures; realising alignment of strategic priorities; and on supporting the creation of networks and clusters. This is particularly relevant in building dynamic and supportive ecosystems around our key sectors and activities as their particular needs evolve and new opportunities emerge<sup>389</sup>.

388 See ID2015 Interim Report at <http://www.irishdesign2015.ie/news/single/id2015-the-year-so-far>

389 Ecosystem is the business environment within which enterprises operate. It includes the labour market, higher education institutes and research centres, training providers, regulators, professional services, transport, communications and utilities infrastructures, state agencies, funders etc. It also includes other enterprises (competitors and/or sub-suppliers), and customers.

### A strengthened approach to sectoral ecosystem development

The intensified global competitive environment and pace of change means that a location's attractiveness for investment and business growth is strengthened when a Government demonstrates an understanding of the current and future ecosystem needs of sectors and the capacity to anticipate and respond - this extends well beyond an FDI agenda. The more we identify/understand sector specific ecosystem aspects and take the necessary action to accelerate growth (or remove barriers) – the more likely it is that the full potential of a sector will be realised to deliver jobs & economic impact.

Although the enterprise development agencies work directly with companies in export oriented sectors and activities, not all sectors of the economy fall within the remit of DJEI and/or of its agencies. To date (and more so in recent years) it has been challenging for government departments in the Irish context to maintain a development policy focus in a coordinated manner on the agenda for individual sectors over a sustained period.

A strengthened approach in terms of an anticipatory and responsive policy system is needed to see Ireland deliver on its ambition to maintain sustainable growth, to strengthen resilience and to raise its profile as the best place to succeed in business. The overarching imperative is to ensure that we continuously review Ireland's business environment and remain to the forefront as a competitive place from which to succeed in business. Many of the business ecosystem conditions are relevant to all - including, for example, infrastructures, fiscal policies and labour market policies. The challenge over the next decade will be to strengthen our understanding of sector- (or activity-) specific ecosystem needs in a fast paced and competitive environment.. This involves putting in place a strengthened horizon scanning mechanism, building on the individual Sector Briefs developed by DJEI and harnessing the in-market knowledge garnered on an ongoing basis by the enterprise development agencies and embassy overseas networks.

There will also be certain circumstances which warrant an intensive or elevated sector specific response from *across* Government at a point in time. The proposed approach aims to embed strengthened operating principles through the establishment of Ecosystem Development Teams (EDTs). Determining which sectors, activities or emerging market opportunities are of strategic significance and require an elevated policy response will not be an exact science. The possible motivation for initiating an elevated policy response would fall into one or more of three categories as follows:

- **Scale of the opportunity** – where there is substantial untapped potential that could be harnessed by enterprise in Ireland. A strategic case would need to be established and would incorporate a range of empirical metrics; for example: potential contribution to GVA and employment and the potential scale of the export market; a significant output multiplier effect or wider spill over effects.
- **An impending upheaval** – from time to time, major exogenous shocks occur which can have a material impact on business conditions within a sector. Such developments can present challenges and opportunities that the policy system must be agile in responding to; for example the 'patent cliff' in the pharmaceuticals industry or the reform of the CAP (catalyst for the Food Wise 2025 process). Appropriate metrics in terms of potential impact may also need to be examined.
- **A national imperative** – where there is a need for concerted and decisive action where the future health of a sector will have wider systemic consequences. Examples of this include the construction or energy sectors, where continued health of the sector is

required for social and macroeconomic reasons and not simply the sector's own development and direct economic contribution.

It is anticipated that an EDT would be limited in size, have strong leadership, include high level Government, industry and research community representation, with a clearly scoped Terms of Reference, would engage in structured consultation, have a sunset clause and be adequately resourced with a small core team involving a senior level 'business development manager'<sup>390</sup>. It is intended that the number of EDTs in operation at any one time would be limited and set on a rolling basis so as to ensure a rhythm of critical questioning<sup>391</sup>. Following the publication of this enterprise policy, a mechanism would need to be implemented that facilitates a coordinated response across Government to agree the establishment of an EDT in the first instance, and to deliver on policy requirements to remove barriers and/or to put in place the necessary enablers to accelerate growth.

The proposed establishment of EDTs is not intended to replace or supplant the ongoing activities of enterprise development agencies and/or other government departments (e.g. The Food Wise 2020 implementation process). It is however, intended to take a more structured approach to the establishment of such Teams, and to ensure effective use of constrained resources. Rather than spreading resources thinly to support a large number of groups, this proposal allows for more limited, concerted and impactful engagement on a rolling basis.

### Considering the options for all-island sectoral ecosystems

InterTradeIreland commissioned a study in 2014 to assess the areas of potential advantage that could be realised by taking an all-island approach to sectoral ecosystem development<sup>392</sup>. The findings indicated that the benefits of all-island interaction lie primarily in the areas of the labour market, education and training, infrastructure provision, goods and services markets, research, technology and innovation and financial markets. The degree to which the potential benefits of the individual factors can be garnered is dependent on the degree and manner by which all stakeholders within the ecosystem interact with each other.

Case studies were presented for the pharmaceutical, the medical devices and the ICT sectors. A number of areas were presented as options for consideration by ITI. The report provides an informed basis for engaging more deeply with relevant stakeholders<sup>393</sup> to provide a realistic assessment of the *specific* policy and resource implications and actions required on both sides of the Border to address barriers and to realise potential. Some options involve building on relationships and connections that have already been made.

Without pre-empting which options may lead to greater engagement on an all-island basis, a snap-shot of the areas of opportunity and strengthening include:

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390 Examples of such approaches include the Top Teams approach in the Netherlands and the Matrix approach in Northern Ireland

391 mirroring the international experience in the Netherlands and if we are to avoid a 'group surge' drawing on State resources

392 Mapping the Potential for All-Island Sectoral Ecosystems: A Summary Report, InterTradeIreland, September 2015

393 Including DJEI and Department of Enterprise, Trade and Innovation, Northern Ireland, relevant Departments of Education, skills and training providers, enterprise development agencies, Departments of Health and respective agencies etc. The stakeholder engagement is particular to the specific option set out

- Pharmaceuticals:
  - coordination of research centres, institutes , education/training and networks; and
  - all-island interoperable clinical trials coordination network;
- Medical devices sector:
  - increasing all-island cooperation in the health information sector;
  - enhancing coordination of training in medical device commercialisation; and
- Software development:
  - developing an all-island internship scheme; and
  - increased research collaboration.

Notwithstanding the ongoing need for concerted efforts to realise the ambition set out in this enterprise policy, it will be important to consider the areas in which effective engagement with Northern Ireland will benefit both jurisdictions over the coming decade. Such engagement should be considered in the context of EU initiatives<sup>394</sup>, reducing barriers to cross border trade within the Single Market, and Ireland's enterprise and SSTI longer term policies.

	<b>New approach to sectoral ecosystem development to accelerate growth and deliver greater economic impact</b>	
	<p>Implement a systematic approach to sector ecosystem development in the context of intensified international competition, the pace of change, evolution of sectors and emergence of new areas of opportunity to enhance economic performance, impact and international reputation and visibility by:</p> <ul style="list-style-type: none"> <li>▪ developing Sector Briefs, and working closely with the enterprise development agencies and other relevant government departments, introduce a more systematic and comprehensive approach to horizon scanning that will harness in-market and sectoral knowledge. This strengthened horizon scanning will facilitate the identification of emerging opportunity areas and or disruptive trends, the early assessment of potential and whether or not there are sector specific policy implications that necessitate a policy response;</li> <li>▪ establishing sector specific Ecosystem Development Teams for limited periods to progress key sectoral initiatives; and</li> <li>▪ introducing effective oversight to monitor sector development across the economy and the emerging requirements for policy.</li> </ul>	DJEI Agencies, Govt Depts, Int'l Networks
	<b>Driving all island approaches to sectoral development</b>	
	Strengthen all-island approaches to sectoral ecosystem development as appropriate and as opportunities arise to deliver greater economic opportunity and potential for investment and job creation.	ITI (and DJEI)

<sup>394</sup> Including, for example Horizon 2020

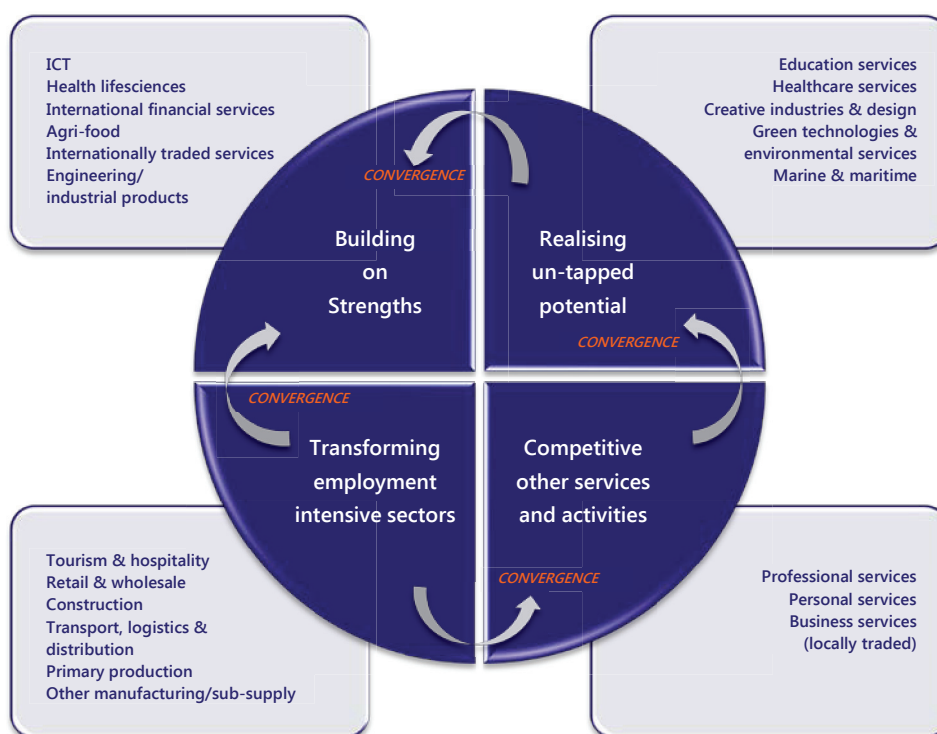


## Sectoral cohorts - characteristics and policy emphasis

We will take a portfolio approach to enterprise development over the next decade – embracing all sectors of the economy and recognising that sectors contribute to economic growth in different ways. An economy-wide sustainable and 'balanced' portfolio will serve to strengthen resilience in the face of external shocks. The overarching policy focus is on ensuring that we optimise the potential of the enterprise base - strengthening competitiveness, productivity and innovation, to ensure a diverse and resilient portfolio of activity. A review of individual sectors demonstrates that categories of sectors share broadly similar characteristics and business needs<sup>395</sup>. We have categorised sectors within four broad cohorts (including both manufacturing and services activities) – see Figure 11 and Table 5:

- Building on strengths
- Transforming employment intensive sectors
- Realising un-tapped potential
- Competitive other services and activities

Figure 11 Sectoral cohorts



395 Note that the term 'sector' is being applied here in a catch-all way and which facilitates quantification, cognisant of the diversity within those named and also the blurred edges between them (discussed earlier in this chapter)

**Table 5** Sectoral cohorts - brief overview and potential to 2020<sup>396</sup>

<p><b>Building on strengths</b></p> <p>ICT Lifesciences AgriFood Internationally Traded Services Internationally trading financial services Engineering/industrial products</p>	<p>Primarily export oriented - contributing circa 81 percent to total exports. These sectors reflect the bulk of the enterprise agency client base. Includes both foreign and Irish owned entities through from small to large scale multinationals. Employs 283,100 directly with the potential to grow to almost 345,000 by 2020.</p>
<p><b>Transforming employment intensive sectors</b></p> <p>Tourism Retail &amp; wholesale Construction Transport &amp; logistics Primary production Other manufacturing/sub supply</p>	<p>These sectors are primarily locally trading (with the exception of tourism that generates foreign earnings and some 'other manufacturing'). They contribute a significant proportion to Ireland's total employment at 893,800 today. In the main they play a dual role in the economy. High proportion of Irish owned, but with increasing foreign owned presence (particularly hospitality and retail). Includes companies through from micro to large scale. There is potential to grow employment to over 1 million in this cohort by 2020.</p>
<p><b>Realising untapped potential</b></p> <p>Creative Industries Green Technologies / environmental services Marine and maritime Education services Healthcare services</p>	<p>Broadly defined sectors that incorporate a range of very different sub-segments and cross a number of government department areas of responsibility. Includes creative industries, green technologies, environmental services, and marine and maritime. Education and health services present opportunity for private sector provision and internationalisation. Generally small scale, Irish owned and regionally dispersed. Employing 213,300 directly currently with the potential to employ a further 30,000 by 2020.</p>
<p><b>Other locally traded services and activities</b></p> <p>Legal, accounting and other professional services Business and consultancy services Personal services</p>	<p>Primarily professional, business and personal services trading locally. High proportion of micro enterprises with some larger scale providers that deliver services internationally and/or through global partnerships. Considerable potential to enhance competitiveness, which benefits other businesses and the overall economy. Approximately 187,000 are employed today with the potential to increase to almost 208,000 by 2020.</p>

<sup>396</sup> A bottom up analysis was undertaken by DEJI to better assess 'where will jobs come from' across these cohorts informed by sectoral trends and export potential (as relevant) in the context of Medium Term Economic Strategy and Spring Economic Statement. Cohorts based on DJEI analysis of relevant NACE codes

The categorisations should be regarded as a snapshot in time. The convergence of formerly discrete sectors as well as the increased potential for internationalisation point to an evolving and dynamic landscape. The characteristics are informative (and not definitive) – entrepreneurship can occur in any of these sectors or activities and small and micro enterprises are in evidence on each of the cohorts.

Nevertheless, taking this portfolio approach and by analysing our enterprise structure in this way, we can tailor sector specific policy responses accordingly - ensuring that we target our constrained resources to optimise economic returns.

### Building on strengths

This cohort contributes the greatest proportion to Ireland's exports, accounting for just over 81 percent of total exports and valued at €168.6 billion - demonstrating Ireland's comparative advantage. It employs 283,100 people directly<sup>397</sup>, with a significant multiplier effect in terms of indirect employment<sup>398</sup>. Both foreign and Irish owned entities operate in these sectors.

These export intensive sectors are a strategic focus for both IDA and Enterprise Ireland and will continue to play a central role in driving Ireland's export growth over the next decade, assuming a focus is maintained on their next stage of development and on transformational change, and that any underlying structural deficits are addressed.

The sectors in this cohort are RD&I intensive although some individual enterprises continue to be involved in relatively low value added activities. The reality is that if Ireland is to sustain its comparative advantage, these sectors and enterprises within them need to be highly productive and innovative in order to compete effectively in overseas markets. Our analysis has shown that in overall terms a relatively small number of foreign owned entities are responsible for a high proportion of national business investment in R&D, indicating that further efforts are required to redress this. Through its prioritisation exercise<sup>399</sup>, the State has oriented the greater proportion of its investments in Ireland's RD&I infrastructures to address the current and future needs of these sectors and it is crucial that this investment is leveraged through increased collaboration between research institutes and both foreign owned and Irish owned enterprises.

Irish entities (with some exceptions) face challenges in terms of reaching scale, although this points to potential, rather than a criticism of performance to date.

For foreign subsidiaries based in Ireland, their positioning within corporate global strategies is crucial. This may involve garnering responsibility for specific product lines or territories, benchmarking favourably against sister sites, and/or involve responsibility for centralised

- ICT, hardware and software
- Health life sciences
- International financial services
- Agri-food & fisheries
- Internationally traded services
- Engineering/Industrial products

397 DJEI analysis - based on most recent data available (see Appendix IX for further details and sources)

398 Estimated at approximately 1.9 for exporting sectors (Indecon analysis for DJEI, 2015)

399 The Report of the Research Prioritisation Group, DJEI/Forfás, 2012. Smart specialisation is about prioritising and channelling resources towards those RD&I investments that have the potentially highest impact on the national and/or regional economy.

functions such as supply chain management (SCM), customer support, RD&I and a broad range of headquarter activities.

The enterprise development agencies provide direct financial<sup>400</sup> and advisory supports to enterprises within these export intensive sectors<sup>401</sup>. The overarching aim is to stimulate additional greenfield or expansion investment, and/or investments in transformational change and development that would not otherwise occur in Ireland without such intervention<sup>402</sup>. Supports are tailored to the specific needs of the enterprise, its strategic objective, maturity and stage of development.

In order to realise future potential the following are particularly important and have been set out in greater detail in earlier sections of the report<sup>403</sup>:

- Enterprises need to continue to invest in RD&I in the context of intensified competition and technological disruption. This can be facilitated by a targeted approach by the agencies to deepen competences of those already investing and to stimulate investments by (currently) non-R&D active entities. In this context, it is important that we deepen the understanding of innovation in services and its potential, accompanied by the development of appropriate initiatives to stimulate greater investment by enterprises in business services RD&I; in development and/or adapting relevant technologies; and in behavioural analysis.
- There is a need for greater collaboration between enterprises and research institutes including National Research Centres, Technology Centres as well as strengthened capabilities within enterprises in IP protection and exploitation, and mobility of personnel between the research community and enterprise.
- Export oriented enterprises need to maintain an in-depth knowledge of end markets and customer needs, coupled with the skills to identify and capture new opportunities. A policy focus on developing international sales and marketing capabilities, together with language skills and an understanding of different cultures and approaches to business is an imperative in this regard.
- We will continue to take a concerted effort to stimulate the scaling ambition of Irish owned enterprises in a considered way that aims to optimise economic activity in Ireland.
- We aim to facilitate enhanced approaches to clustering activities involving both foreign and Irish owned entities and across sectors.
- We will continue to focus on broadening the awareness of the benefits of embracing principles for enhanced productivity<sup>404</sup>, and in particular on stimulating engagement by

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400 Operating within EU State aid guidelines, aimed at achieving additionality and addressing market failure

401 The focus on export oriented activities minimises issues relating to displacement that might occur if financial supports were available to all enterprises that operate on the domestic market

402 Or would not happen at the same pace and/or to the same scale

403 Section C - Innovativeness (incl. clustering) and Talent chapters

404 Including, for example LEAN, six sigma etc

mid-sized companies<sup>405</sup>, by services enterprises, and by mid-sized industrial engineering entities within the IDA portfolio.

- 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 reputation. There are also likely to be new demands for enterprise-led skills development as 'new' sectors and activities emerge (e.g. combination health products, ePayments, renewables).

Deepening Ireland's comparative advantage	
<p>Strengthen Ireland's comparative advantage by attracting new investments, leveraging State investments in prioritised research areas, effecting continuous transformational change and being open to new areas of opportunity arising through convergence and adjacent possibilities. This involves both an anticipatory and responsive approach in an intensely competitive and fast paced global environment.</p> <p>Coordinated action will also be required involving researchers and education and training service providers.</p> <p><i>The recommendations relating to an enhanced approach to sectoral ecosystem development, trade, strengthened clustering initiatives, enhanced agency collaboration, RD&amp;I, and cross-sectoral/convergence initiatives are all directly relevant. Business environment factors that enhance relative competitiveness with other economies remain crucial to the continued success in these sectors.</i></p>	<p>DJEI, Enterprise agencies</p>

### Realising un-tapped potential

There is nothing fundamentally new about the sectors captured in this cohort, although there is evidence that there is considerable potential yet to be realised<sup>406</sup>. These dynamic sectors are generally broad, encompassing a range of very different sub-sectors with very different needs - and this complexity itself presents a challenge for policy<sup>407</sup>.

The range of activities involved spans the responsibilities of a number of government departments that have mandates well beyond that of enterprise development. This cohort therefore in general does not have full 'ownership' at a government department level to drive the enterprise development agenda (noting that a strategy for marine/maritime is currently being developed and led by Minister for Agriculture, Food and Fisheries). Enterprise level

405 Refer to [www.djei.ie](http://www.djei.ie) for the Evaluation of Enterprise Ireland's Lean Business Offer 2009-2012, DJEI 2015

406 Some 'newer' market segments could also be captured in this cohort as untapped potential - including for example, smart ageing, sport and nutrition - primarily because these market segments will be addressed by a range of sectors across the economy and would involve a collaborative system of engagement across government departments and agencies to realise their potential

407 For example, the marine sector relies on Ireland's seas and deals with many competing demands involving shipping lanes, fishing rights, renewable energy sources, harbour development, tourism and leisure needs. The creative sector encompasses digital media, fashion design, arts and crafts, architecture and interior design, and the visual and performing arts

supports are disparate and involve a number of different agencies (including e.g. SEAI, Irish Film Board, Bord Iascaigh Mhara, as well as Enterprise Ireland and IDA Ireland).

It is difficult to fully assess the scale of the opportunity, or even to fully size the sector/activity today because of data limitations. Nevertheless, global trends indicate high growth in demand for products and services delivered by enterprises involved in these sectors, and there are new market opportunities in emerging and developing economies. In education and healthcare services, there is increasing evidence of private sector provision<sup>408</sup>, in what has traditionally been the domain of the public sector. Education services presents greater opportunity to trade internationally and/or to attract foreign earnings, and the trend for healthcare services sees a shift toward a patient centric in community approach to wellness and health management (as distinct from a hospital centric model) and the potential for greater use of technologies (eHealth).

Creative Industries & Design  
Green Technologies & environmental services  
Marine & Maritime  
Education Services  
Healthcare Services  
eHealth

From a policy perspective it is important that there is strong and clearly designated 'ownership', authority and responsibility at Department and Agency level to deliver a cohesive and coordinated approach to develop the enterprise potential for sectors that cross areas of responsibility. This aspect was highlighted in Making it Happen, 2010<sup>409</sup>. Some progress has been made since then. Enterprise Ireland has been designated with responsibility for international trade in education services. A strategy is currently being developed for marine and maritime. Although progress has been made in the case of green technologies - with DCENR, IDA Ireland, Enterprise Ireland, SEAI and SFI working collaboratively - the Action Plan for Jobs 2015 highlights the need for more concerted and coordinated efforts to deliver on the enterprise potential for energy<sup>410</sup>.

Well-developed locally and regionally based initiatives could play a role here and the Regional Action Plan for Jobs currently being developed have the potential to drive forward pilot projects in the first instance, with clearly designated key performance indicators (KPIs). They can facilitate 'storming, norming and forming' and building of trust that is required to underpin sustainable clustering over the long term. The design of initiatives is important, ensuring that objectives are clear, that there are benefits for enterprises, that risks of over-engineering are addressed, and that there is realism about what outcomes can be achieved in an 18 month to two year timeframe.

<sup>408</sup> However, some private sector opportunities arise primarily as a result of outsourcing policies being implemented by the public sector, and the public sector may be the only customer for a number of firms

<sup>409</sup> Although not within this cohort, the establishment of a High Level Group for Agri-Food and the development and implementation of Harvest 2020 demonstrates what can be achieved through a well championed and coordinated approach involving a range of government departments, bodies and agencies

<sup>410</sup> Identified as a 'disruptive reform' in Action Plan for Jobs 2015

	<b>Realising un-tapped potential</b>	
	<p>Develop and deliver regionally based sectoral initiatives, including collaboration across regional boundaries, taking advantage of the €100 million regional collaborative fund launched by DJEI in 2015, aimed at bringing the key stakeholders together to take the necessary action to deliver jobs and growth based on harnessing regionally based assets.</p> <p><i>The recommendations relating to addressing grand challenges are particularly pertinent and require direct engagement by Departments of Health, Education, Environment and others aimed at delivering increased efficiencies and outcomes while providing opportunity for Irish based enterprises.</i></p>	DJEI
	<p>Develop the full potential of the Marine economy through the implementation of the Harnessing Our Ocean Wealth strategy.</p> <p>Develop and implement strategies for new areas including eHealth, Healthcare services, Creative Industries and Design.</p>	DAFM  Various

### Transforming employment intensive sectors

The sectors in this cohort are relatively more employment intensive and provide a significant contribution to employment. Today they employ almost 894,000 people directly, contributing 46 percent to total employment (or approximately 56 percent of private sector employment), across a range of occupational disciplines and throughout the country.

The sectors in this category comprise both foreign and Irish owned enterprises - a substantial proportion of which includes small and micro enterprises. Although there are enterprises within each sector that are involved in exports, the vast majority trade primarily on the domestic market (with the exception of tourism which generates foreign earnings generated from overseas visitors). Increasingly enterprises within these sectors face international competition on their doorstep as foreign owned entities invest here to serve the domestic market<sup>411</sup>.

Our enterprise policies will aim to realise an uplift in productivity (for example through lean initiatives and leadership development), the capacity to innovate and adopt/adapt

- Construction
- Retail
- Transport
- Tourism & Hospitality
- Other Manufacturing
- Primary production (Agri)

411 There are approximately 3,300 foreign owned firms based in Ireland employing approximately a quarter of a million people. About 1,100 of these are supported by IDA Ireland, and the remainder primarily service the domestic economy and are involved in activities that include retail and the hospitality sector (as well as telecoms, natural resources etc.) Policy Statement on Foreign Direct Investment in Ireland, July 2014, Department of Jobs, Enterprise and Innovation

technologies<sup>412</sup> within these (often termed traditional and/or mature sectors). The forces of change are disruptive for enterprises in this cohort, offering considerable opportunity for growth in 'new' activities and ways of doing business. The opportunities to internationalise are greater than they might have been a decade ago. A number of these sectors and activities are also subject to potential disruption arising from the sharing economy. As the sharing economy expands from a consumer-to-consumer initiative to a business-to-consumer (B2C) and business-to-business (B2B), new entrepreneurial opportunities as well as challenges to existing businesses arise. There is potential for established enterprises to complement their existing business models.

As well as providing direct employment opportunities, the sectors in this cohort play a key role in the wider business and social environment. They provide a valuable wider contribution to economic development - such that that their competitiveness is vital to enterprises in a range of other sectors and activities.

- **Construction** provides and maintains the physical infrastructures and buildings on which every other industry and society depends. The construction sector forms a crucial part of the business environment and is a critical competitiveness factor underpinning enterprise investment and growth.
- **Retail** provides a wide range of services and plays a key role in enhancing the dynamic of towns and cities and quality of life throughout Ireland, and in contributing to Ireland's overall attractiveness for investment and mobile talent.
- **Transport and logistics** services are an essential part of the value chain for enterprises that deliver goods either locally or internationally. Transport network services are crucial to facilitate the efficient mobility of people throughout Ireland (to and from work, for tourist activities, to access education & health services etc.) and internationally.
- **Tourism** encompasses a range of activities across hospitality, retail, leisure and cultural amenities, and Ireland's tourism offering may often be the first exposure an individual has to the country. Tourism plays a key role therefore in how Ireland is perceived (including standards, cost competitiveness, attitudes) and in promoting Ireland in overseas markets (see also Section C – Connectedness).
- **Other Manufacturing** involves those enterprises that primarily target local markets, as well as those involved in sub-supply to other entities that are exporting. Competitive, high quality and innovative sub-suppliers are a crucial element of Ireland's eco-system, and they face intense competition from overseas players and imports. There is potential for a number of entities in this segment to export and/or to connect into global supply chains
- **Primary production - agriculture** is a key contributor to delivering on Ireland's ambitious targets set out in Food Wise 2025<sup>413</sup>

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412 Many opportunities can be realised through the deployment, adoption and/or adaptation of general purpose technologies that produce a significant impact on the efficiency and quality of an existing (often traditional) sector - ref Policy Brief No 8 Smart Specialisation and the New Industrial Policy Agenda, Dominique Foray, European Commission

413 413 Primary production is critical to achieve the ambition for Ireland's agri-food sector – See also Foodwise 2025, DAFM



- Advances in technologies, consumer demands for traceability from farm to fork, and the not inconsiderable environmental challenges enable and require significant transformation farming and animal husbandry. A trusted food source will be a genuine competitive advantage in the global context.

In order to drive competitiveness, enhance productivity and capacity for innovation, we will deliver a small number of tailored interventions to small enterprises operating in these sectors that continue to trade on the domestic market<sup>414</sup>.

### Competitive locally trading professional, business and personal services

This cohort includes professional and business services (including legal, accountancy, IT, training, and market research), medical and personal services (leisure, beauty) and others not already captured in the above analysis.

Enterprises in this cohort include a high proportion of micro enterprises, and a relatively small number of large enterprises (some of whom are part of an international professional network). As with the cohort above, a small number of interventions are available to small enterprises operating in this segment, focused on driving enhanced productivity, innovation and competitiveness and with the ultimate aim of delivering sustainable employment.

This category plays a key role in terms of input costs for business, and the cost of living for individuals. Competition policy is particularly relevant.

	<p><b>Enhancing the productivity and innovative capacity of locally trading and employment intensive sectors</b></p>	
	<p>Develop and implement a programme to target a broader cohort of small enterprises in these sectors (and operating within state aid guidelines) to deliver improved productivity, innovation and competitiveness, including for example the use of innovation vouchers, establishment of Skillnets, management development, mentoring, peer-to-peer networking, lean initiatives and awareness raising.</p> <p><i>The recommendations relating to broader business environment and cost competitiveness are directly relevant.</i></p>	<p>DJEI &amp; relevant actors</p>

The greatest impact for the development of enterprises in this cohort will be achieved through measures that enhance the overall business environment to improve productivity and costs and these are discussed in Section E – Excelling in getting the basics right.

## Convergence and adjacent possibilities

As set out above, there is an increasing and ever changing dynamic within and across sectors of the economy. The pace of change has accelerated, and we are seeing an increased blurring at the edges of what have been relatively discrete or siloed sectors. For example, combination

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414 Enterprises that are exporting and/or have the potential to do so fall within the remit of Enterprise Ireland. Direct financial supports for job creation are not available to domestically trading enterprises, with the exception of start-ups involved in manufacturing or internationally trading activities

products 'cross' medical devices and pharmaceuticals sectors<sup>415</sup>; while nutraceuticals can be categorised as a sub-segment of either food or pharmaceuticals and involves companies from both industries. Convergence is primarily driven and enabled by advances in technologies and results in potential in new products and services and the emergence of 'new' sectors and activities. Policy aspects such as regulation, standards and IP are relevant in this regard.

The idea of adjacent possibilities started with evolutionary biologist Stuart Kauffman, which holds that an idea will catch on, or be readily adopted, if it is 'sufficiently adjacent' (conceptually or technically closely related) to existing ideas that currently dominate a given market. The core of the idea is that people arrive at the best new ideas when they combine prior (adjacent) ideas in new ways. An example might be the application of the knowledge, expertise and competences in the textiles sector to the development of composites; or of glass extrusion to photonics.

Opportunities arising from convergence and adjacent possibilities are pervasive and may come from anywhere and impact on any of the sectors discussed here. The identification of emerging areas of opportunity will be realised through more effective horizon scanning, facilitating cross sector networks and/or events; and/or by establishing opportunities whereby enterprises can collaborate to deliver on grand challenges (a selection of emerging areas of opportunity are presented in Appendix VIII).

*Recommendations relating to grand challenges (Section C – Differentiators: Innovativeness) and an enhanced approach to sectoral ecosystem development (and specifically horizon scanning) earlier in this chapter are relevant.*

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415 Combination healthcare products, for example, include novel drug-delivery systems such as transdermal patches through to the more complex regenerative medicinal products and enterprises involved in medical devices and pharmaceuticals sectors



## Strengthening resilience – enhancing overall enterprise performance

### Introduction

Ireland's enterprise structure is somewhat distinctive as a result of industrial policies that have been in place since the late 50s that have involved the targeting of foreign direct investment (FDI). The vast majority of enterprises within the economy are Irish owned, with most being small and trading on the local market<sup>416</sup>. Approximately 5,800 Irish owned export oriented enterprises are supported by Enterprise Ireland employing just over 180,000 directly<sup>417</sup>. Foreign owned entities contribute the greater proportion to exports and to value add. It is estimated that there are approximately 3,300 foreign owned entities based here, of which almost 1,200 are supported by IDA Ireland employing 169,395<sup>418</sup>. Direct economy expenditure in terms of materials and services by the agency supported exporting cohorts in 2013 were €13.2 billion for Irish owned, and €15.6 billion for foreign owned<sup>419</sup>.

The current enterprise mix (in terms of ownership) can lead to suppositions that we are overly reliant on 'transient' foreign investments and that our FDI policies may have in some way hindered the growth of Irish owned enterprises. In fact, when 'comparing' data based on ownership there can be a lack of recognition of the extent to which a number of our innovative Irish owned enterprises have internationalised and are global leaders in their field. Strong examples include Ryanair, Kerry Group, CRH, Paddy Power and Kingspan. CSO has only in recent years started to collect data relating to Irish owned internationalised businesses. Latest CSO data indicates that Irish owned entities employ circa 245,000 in overseas locations and realise €75.9 billion in turnover. These companies play an important role in raising Ireland's profile internationally as a leading, innovative and entrepreneurial economy.

Earlier analysis set out in this report in Section A demonstrates the structural shift that has happened within our Irish owned enterprise base. Ireland's increased focus on stimulating entrepreneurship and on attracting foreign entrepreneurs and innovative early stage businesses to establish here forms an important element of the enterprise mix. It is also important to acknowledge the significant role that our FDI policies have played over the past decades in realising this transformation such that today, we can boast a much more globalised Irish leadership with the capabilities to succeed and to achieve scale in international markets<sup>420</sup>.

It is this mix that makes Ireland unique - and it is this mix that can continue to drive sustainable export growth and job creation and strengthen resilience.

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416 98.4 percent of active enterprises in Ireland employ less than 50 people (2012), Business Demography, CSO Statbank

417 Comprising 156,202 full-time and 23,870 part-time. Údarás na Gaeltachta supports a further c.1,200 firms, employing 6,270 full-time and 845 part-time, DJEI Annual Employment Survey, 2014

418 Comprising 151,747 full-time and 17,648 part-time. The balance has invested to serve the domestic market

419 DJEI ABSEI, 2013 (latest available data)

420 Enterprise Ireland's Leadership for Growth programme has proven to be very successful in terms of driving ambition and international focus within Irish based management teams

Nevertheless, we face challenges as we enter the next decade to 2025. The following sub-sections set out our policy approach to:

- simulating greater levels of entrepreneurship and better survival rates;
- enabling increased productivity and capacity to innovate in small, locally trading entities;
- stimulating the potential to scale within Irish owned enterprises in a way that optimises economic benefit for Ireland; and
- continuing to attract (and retain) mobile FDI in the face of intensified international competition.

It is evident from the commentary below that some aspects may beg questions of the current policy distinctions based on ownership. For example enterprises can now internationalise at a much earlier stage of their lifecycle - the 'born globals'. The attraction factors and supporting environment required by them are largely the same regardless of whether they are home grown or foreign owned. The scaling agenda for Irish owned enterprises is an ambition set in the context of different modes of internationalisation. The complexity and inter-related, multidimensional aspects of global value networks and ways of doing business require a continuous reassessment of our policy approaches and agility in terms of policy responses.

## Entrepreneurship - stimulating a pipeline for growth

New businesses are a critical element of any economy's growth and performance. New businesses are the source of new ideas, new technologies, new and disruptive business models and sectors. New businesses drive change, innovation and competitiveness. New businesses create jobs.

It is people - entrepreneurs - who create new businesses. Entrepreneurship can be defined as an individual's creative capacity to identify an opportunity and pursue it in order to produce new value or economic success<sup>421</sup>. Entrepreneurship and new and sustainable business start-ups thrive within a dynamic community of like-minded and supportive individuals.

Entrepreneurship is an integral part of Ireland's overall enterprise policy and a *National Policy Statement on Entrepreneurship in Ireland* was published in 2014<sup>422</sup>. Entrepreneurship is key to raising Ireland's reputation and profile internationally as the best place to succeed in business - to succeed from the earliest stage of formation. The concept of entrepreneurial discovery is fundamental to Ireland's smart specialisation strategy. Although we have set aside this section of the report to place a spotlight on entrepreneurship, all other aspects of this report (talent, innovativeness, connectedness, place-making, the funding environment) are directly relevant to creating the right environment to stimulate more individuals to see starting a business as a career option.

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421 There is no clear consensus on whether the definition of entrepreneurship should include self-employment and intrapreneurship (the creation of new corporate subsidiaries from within). This creates difficulties in terms of measuring a country's entrepreneurial profile

422 This chapter draws from the *National Policy Statement on Entrepreneurship in Ireland, 2014*

## Entrepreneurship in numbers

Historically, two thirds of new jobs in Ireland have been created by companies in their first five years<sup>423</sup>.

Enterprise births in Ireland (a key indicator of entrepreneurship) amounted to 12,551 in 2012, representing an increase of 6 percent over the previous year<sup>424</sup>. However, this had fallen from a peak of 16,969 in 2006<sup>425</sup> just prior to the economic recession. The rate of early stage entrepreneurs<sup>426</sup> increased to 269,000 in 2013 and Ireland's ranking against other countries has greatly improved over a 10 year timeframe. Ireland is now ranked 11<sup>th</sup> among the OECD countries, 9<sup>th</sup> of the EU-28 countries and 2<sup>nd</sup> of the EU-15 countries. However, although early indications of recovery are characterised by high 'necessity driven'<sup>427</sup> entrepreneurship, there is an encouraging upturn in the number of people indicating they want to start a business within the next three years (up over 80 percent).

From a sectoral perspective, there appears to be a greater focus on consumer service sectors in Ireland relative to the EU and OECD (55 percent in Ireland compared to 42 percent and 45 percent respectively). On the other hand EU/OECD has a relatively higher proportion of activity in business services sectors (27-28 percent EU/OECD relative to Ireland's 21 percent). In terms of educational attainment, our entrepreneurs are more likely to have higher levels of education relative to EU/OECD comparators.

The route to starting a company can vary. Many entrepreneurs start their careers in employment, others come from the research community, some may come from a business background and take over the running of a family business, others may lead a management buy-out (MBO), and others may start a business out of necessity (having been made redundant for example). Research undertaken by Forfás on High Growth Firms (HGFs)<sup>428</sup> indicates a strong correlation between high growth and the experience of a start-up team. This suggests that the quality of the pipeline innovation-led HGFs could be enhanced by stimulating spinouts from established businesses, start-ups amongst experienced professionals and serial entrepreneurialism.

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423 Research published by the Central Bank of Ireland in 2013 concludes that 67 percent of new job creation comes from companies within their first five years. Research from the Kaufmann Institute in the United States also indicates that new and young businesses are the primary drivers of net job creation

424 Business Demography, 2012, CSO Statbank (latest available data)

425 Business Demography, 2012, CSO Statbank (latest available data)

426 Total early stage entrepreneurs includes nascent entrepreneurs and new business owners. Nascent entrepreneurs are those actively planning a new venture, Global Entrepreneurship Monitor Report (GEM) for Ireland 2012

427 Necessity entrepreneurship refers to people seeking to start a business because they have reduced alternative employment options

428 Innovation in Agency Supported High Growth Firms in Ireland, Forfás, 2013

## Our ambition<sup>429</sup>

Our ambition is to double the jobs impact of start-ups in our economy and to:

- increase the number of start-ups by 25 percent - that is, we aim to see 3,000 more start-ups being created each year;
- increase the survival rate in the first five years by 25 percent;
- improve the capacity of start-ups to grow to scale by 25 percent.

Our vision to be *the best country in which to succeed in business* means that we need to create the business environment that facilitates and supports business through all phases of its lifecycle. Our role is to remove any obstacles to starting a business, and to seek ways in which we can minimise risks, redress any (mis)perceptions of failure within the entrepreneurial community and ensure that starting a business is considered by many of our young people as a valid career option.

We will focus on establishing a dynamic environment where like-minded people can collaborate, network, co-work and have ready access to experienced mentors and/or other business people that have already navigated the start-up years. We need to ensure a coordinated, comprehensive and cohesive approach is taken to raise Ireland's profile internationally as a vibrant hot spot for entrepreneurship and talent<sup>430</sup>.

It is worth reinforcing that the practical aspects of getting started are key for the individual navigating his or her way through the early stages. There are a number of initiatives that have been taken by successive governments to reduce barriers to entry for start-ups and to make the first few years of business easier. These include, for example, the recently completed consolidation and simplification of the Companies Act<sup>431</sup>, continued focus on streamlining and reducing the costs of registering a business<sup>432</sup>, and the planned introduction of an integrated licencing system. We will continue to reinforce the *'think small first'* principle in terms of making it easier for businesses to start and to navigate their way through the first years of trading.

We will continue to focus on attracting overseas entrepreneurs to Ireland - but we must also be attuned to the fact that Irish entrepreneurs can (and some do) choose to locate in other jurisdictions. The realities of business, proximity to markets and customers may drive these decisions. Nevertheless, we need to ensure that we do not inadvertently disadvantage Ireland in any location decisions being made. Nor can we assume that individuals will opt to start a business (and create jobs for others) rather than become an employee. In this context we need to review our competitiveness vis a vis other jurisdictions (and in particular our nearest trading

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429 As set out in The National Policy Statement on Entrepreneurship in Ireland, 2014

430 Initiatives such as the Start-up Gathering <http://startupireland.ie/>, the Web Summit, Activating Dublin etc., IT's Happening Here portal are relevant in this regard

431 Note that the Companies Act has been significantly streamlined and amended. There is also extensive work underway to develop and launch an integrated licensing application service

432 Over the past three years the Companies Registration Office (CRO) has reduce processing time by three days and the cost of registration by one third due to augmenting its online business registration facility. The CRO aims to reduce the average length of time required to register a new business to seven days in 2015. In New Zealand the process takes only a half day, which highlights that there remains room for further progress to be made

partners and competitors)<sup>433</sup> in aspects such as personal taxation, capital gains tax, share based remuneration in private companies (See Section E – Excelling in getting the basics right: Taxation). We have reviewed the take-up of existing initiatives and continuously seek to reduce any complexities and/or administrative burdens (including the Start-up Company Relief<sup>434</sup>, the Startup Refunds for Entrepreneurs<sup>435</sup> and the Employment and Investment Incentive Scheme<sup>436</sup>).

Establishing an environment to stimulate entrepreneurship will require concerted effort to continuously assess and reassess what is working and what is not and to take the necessary actions in a timely manner to redress barriers. We are not operating in a static environment. It is important to note that a dynamic community is also an attractiveness factor for FDI and for talent. It is important too, that we look internationally - that we benchmark ourselves against the best in our aim to be the best.

In terms of direct supports Enterprise Ireland provides supports to early stage enterprises that are exporting and/or have the potential to do so, and has a key focus on accelerating the growth potential of high potential start-ups (HPSUs)<sup>437</sup>. The Local Enterprise Offices (LEOs) provide financial supports to start-ups involved in manufacturing and internationally trading services (employing less than ten people) and provide Start Your Own Business Courses and a range of mentor and advisory services<sup>438</sup>. It is important to reflect that companies that engage in management development and/or embrace mentoring are more likely to survive those critical first five years<sup>439</sup>.

The range of actions set out in the *National Policy Statement on Entrepreneurship in Ireland* published in 2014 is synthesised on the table below. They broadly align with the policy emphasis set out in this Enterprise Policy 2025 - involving a focus on talent, innovativeness and connectedness. The concept of place-making is implicit - given that the business environment and location attractiveness factors will influence where an entrepreneur decides to establish a business.

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433 For example, in 2010, the UK Government published the Corporate Tax Roadmap which outlined a plan to make the UK corporate tax system more competitive and has initiated a number of reforms that has meant that Ireland's relative positioning has disimproved

434 Provides relief from corporation tax for the first three years of trading

435 Formerly the Seed Capital Scheme SCS, and rebranded and launched 2015

436 The Department of Finance review of the tax environment for entrepreneurship (July 2015) is pertinent in this regard

437 A HPSU is defined as: a start-up that is introducing a new or innovative product or service to international markets; is involved in manufacturing or internationally traded services; is capable of creating 10 jobs in Ireland and realising €1 million in sales within three to four years of starting up; is led by an experienced management team; is headquartered and controlled in Ireland; and is less than five years old from the date of the company's registration

438 The LEOs are the first stop shop for small enterprises and provide a range of advisory supports and information - see next chapter

439 Analysis undertaken by DJEI in support of its systems evaluations indicates that enterprises that have received management development supports are more resilient and experience higher growth rates than a comparator cohort of enterprises



**Table 6** Synopsis of areas for action – The National Policy Statement on Entrepreneurship in Ireland

<p><b>Culture, human capital and education</b></p>	<p>Engaging the education system through from primary levels to further education, to foster creativity, innovation and entrepreneurial thinking, and to establish starting a business as a valid career option</p> <p>Harnessing the enthusiasm of successful entrepreneurs to engender an ambition amongst pupils and students to start (and grow) a business</p>
<p><b>Business environment and supports</b></p>	<p>Enhancing the business environment so that Ireland is internationally recognised as one of the most attractive environments for entrepreneurship in Europe (including aspects such as company law, taxation, regulation and licensing)</p>
<p><b>Innovation</b></p>	<p>Maintaining a key focus on innovation as a central pillar of enterprise development - investing in building capacity and capability, enhancing infrastructures to support the commercialisation of technologies and promoting Ireland as a location of choice for international entrepreneurs</p>
<p><b>Access to finance</b></p>	<p>Ensuring that Ireland has a strong functioning funding ecosystem that supports early stage companies, involving a range of finance options and efficient and transparent processes</p> <p>Raising awareness of what is available, attracting more angel and international VC investors, and identifying new and innovative sources of funding for entrepreneurs</p> <p>Improving capabilities and skills of both enterprises and lenders to develop and assess business proposals based on a strong understanding of markets and sectors</p>
<p><b>Networks and mentoring</b></p>	<p>Developing world class entrepreneurial hubs, facilitating the environment to stimulate networking and peer mentoring, including for example developing co-working spaces and accelerators, and leveraging the experience of successful entrepreneurs</p> <p>Celebrating and promoting our successes</p>
<p><b>Access to markets</b></p>	<p>Further developing local and international sourcing initiatives, leveraging public sector procurement to provide market opportunities to innovative enterprises, piloting an SBIR programme, stimulating engagement in on-line trading and an export focus from an early stage</p>

Without delaying progress on already identified actions that need to be taken, we will deepen our analysis and understanding of the factors that will have an impact, and we will benchmark Ireland's entrepreneurship eco-system against international leading locations. Our analysis will also be informed by systematic and structured dialogue with entrepreneurs and aspiring entrepreneurs.

	<b>Strengthening our entrepreneurship ecosystem in an international context</b>	
	Implement the National Entrepreneurship Strategy to achieve a 25 percent increase in the rate of start-up, survival and scaling of new businesses in Ireland. The National Competitiveness Council will monitor Ireland's entrepreneurship ecosystem and assess national performance against international comparators across a range of key indicators and report to the Minister for Jobs, Enterprise and Innovation on an annual basis.	DJEI/Whole of Government

### A focus on locally trading enterprises – enhancing competitiveness

Our ambition is to stimulate a greater number of start-ups, to stimulate more companies to export and to enhance the survival rates overall. Many companies will continue to trade on the domestic market and they play an important role in Ireland's economy across a broad range of sectors and activities (as set out in the previous chapter).

A business environment that is conducive to business start-up and growth is directly relevant to small enterprises. One of our key principles is to *think small first* and a number of exemptions and reduced reporting requirements are in place aimed at minimising administrative burden<sup>440</sup>.

The LEOs that operate throughout the regions in Ireland play a key role in as the first stop shop for all small enterprises that trade locally. There are a number of existing initiatives that are available to stimulate enhanced competitiveness at the level of the enterprise. The LEOs may engage on a one-to-one, and/or one-to-many basis as appropriate and may act as a sign-posting service in some instances<sup>441</sup>. Utilising a range of existing initiatives, the focus will be on delivering additionality in terms of:

- enhancing productivity - including the adoption and deployment of ICTs and Lean principles - the LeanStart programme is particularly relevant in this regard;
- raising awareness of, and promoting the use of trading on-line vouchers to stimulate greater adoption of new channels to market;
- stimulating first time engagement in innovation, promoting the use of innovation vouchers to a broader range of sectors and small enterprises and brokering introductions to the relevant Technology Transfer Office and/or Industry Liaison Officer in the locale. The LEOs should also consider mechanisms for facilitating groups of companies to identify common needs in this regard;

440 Including, for example, VAT registration thresholds and cash basis options, reduced filing requirements in the updated Companies Act, Corporation Tax Relief for start-ups as well as competition policies, labour market policies, Think Small First principles applied to RIAs etc.

441 It is not expected that each LEO will itself directly provide all of the supports, for example, LEOs can redirect enterprises to Skillnets, to mentor services provided locally etc.

- promoting greater use of the range of mentor services available and facilitating peer-to-peer networks etc., aimed at raising the bar in terms of management capability and awareness of the value of investing to enhance productivity and innovation; and/or
- stimulating increased engagement in regionally delivered management development, skills and training (including services delivered to networks of enterprises with common needs by Skillnets) and including ICT literacy, financial awareness and language skills (particularly for the tourism market).

The realisation of our ambition would likely require a proactive programme of activity over the coming two years in particular to ‘pump prime’ the potential uplift in performance of enterprises overall. However, it is difficult to assess the implications of such an approach on resources for the LEOs (both financial and human resources). A pilot approach (similar to that suggested in the Review of Mentor Services<sup>442</sup>) could be taken to determine the take up and resource implications of a more proactive approach before introducing it more widely. It is also proposed that a formal review of progress/resource requirements be undertaken by mid-2017.

	<p><b>Enhancing the productivity and innovative capacity of locally trading and employment intensive sectors</b></p>	
	<p>Develop and implement a programme to target a broader cohort of small enterprises in these sectors (and operating within state aid guidelines) to deliver improved productivity, innovation and competitiveness, including for example the use of innovation vouchers, establishment of Skillnets, management development, mentoring, peer-to-peer networking, lean initiatives and awareness raising.</p> <p><i>The recommendations relating to broader business environment and cost competitiveness are directly relevant.</i></p>	<p>DJEI &amp; relevant actors</p>

## Growing the contribution by Irish owned enterprises - building scale and international visibility

Since the publication of Ahead of the Curve<sup>443</sup> there has been increased emphasis in Ireland's enterprise policy in supporting Irish owned enterprises to reach scale, and this ambition was also reflected in Making it Happen in 2010. The enterprise policy objective is to increase the contribution of Irish owned enterprises to economic growth and to realise a greater balance in Ireland's overall enterprise mix. This remains a valid objective today.

In order to achieve these aims, we need to see a greater number of our Irish owned enterprises accelerate their potential to scale in international markets, to achieve leadership positions in their served markets and to create jobs and deliver economic impact in Ireland.

442 The Review of Mentor Services in Ireland, Forfás, 2014 proposed that 2-3 LEOs would be identified ‘to pilot a more proactive approach to actively stimulate demand, raise awareness and address mind-set issues with respect to mentoring. This will help to determine the level of unmet demand and evaluate the potential economic benefits of a more proactive approach in the context of limited resources’.

443 Ahead of the Curve, Ireland's place in the Global Economy, Enterprise Strategy Group, 2004

This section sets out considerations at the level of the enterprise before turning to the increasingly complex policy aspects.

### Evidence of increased numbers of Irish owned companies reaching scale

Following on from the publication of Ahead of the Curve, Enterprise Ireland established a new Division with responsibility to drive this scaling agenda.

Recent analysis of Enterprise Ireland's portfolio<sup>444</sup> indicates that progress is being made in relation to growing Irish owned companies to scale. It should be noted, however, that this analysis is complicated by the fact that if a company has been acquired by a foreign owned entity it transfers to IDA's client portfolio. Therefore some of our more successful Irish owned enterprises are missing from such analysis, which means that 'achieving scale' is likely to be understated. It is also the case that there will always be a number of HPSUs and Competitive Start companies and new entrants to the Enterprise Ireland portfolios that are at the early stages of potentially rapid growth.

Nevertheless, it was possible to undertake an assessment of Enterprise Ireland's portfolio of companies taking snap-shots in time for periods 2004, 2007, 2010 and 2013<sup>445</sup>. The main findings of the analysis indicates that from 2010 to 2013 there has been a positive shift in the proportion of Enterprise Ireland client companies attaining higher levels of scale having reached turnover levels of greater than €10m. Overall, the numbers of firms at the bands of €10-€20m, €20-€50m and €50m plus are at historic highs over a 10 year period.

Notwithstanding this progress, the evidence points to a particular challenge in getting companies to break the €5m turnover barrier, or indeed to grow beyond 50 employees<sup>446</sup>. The proportion of companies with turnover levels at less than €5m remains high at approximately 70 percent of the total client base (although the analysis may also be complicated by the fact that as 'new' companies enter the Enterprise Ireland portfolio, they are most likely to be in the lower turnover bracket).

Complementary to this analysis, Forfás looked at the performance of High Growth Firms (HGFs)<sup>447</sup> within the agency portfolios. HGFs are defined as those that experienced a 20 percent annualised growth rate over the previous three years<sup>448</sup>. Although these firms represented between 4.5 and 6.3 percent of the enterprise portfolio of the agencies<sup>449</sup>, they generated

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444 Analysis of ABSEI data for the past decade undertaken by DJEI - note that there are data limitations. Nevertheless, it was possible to provide indicative findings to confirm that progress on the scaling agenda is being made. In terms of what is meant by scale, we use turnover as an indicative measure. Companies reaching a turnover in excess of €5 million (and €10 million in the case of the food sector) are deemed to have reached a reasonable scale - or at least scaling potential

445 Based on weighted or grossed up data and relates to approximately 2,500 to 2,900 enterprises over the period, DJEI, ABSEI

446 €10m in the case of capital intensive Food companies

447 Innovation in Agency Supported High Growth Firms in Ireland, Forfás, 2013

448 OECD definition of High Growth Firms - An enterprise with average annualised growth greater than twenty percent per annum, over a three year period, and with ten or more employees at the beginning of the observation period. Growth is thus measured by the number of employees or by turnover. The Forfás analysis focused primarily on employment growth

449 The analysis included enterprises employing more than 10 people, supported by IDA Ireland, Enterprise Ireland and Údáras na Gaeltachta and Shannon Development

between 33 percent and 45 percent of new jobs. These findings are within OECD norms. The fact is that HGFs are found across all sectors and at different stages of maturity/life-cycle and all size of enterprise (although with the majority being small) - therefore the concept of HGFs it is not 'just' relating to start-ups, and points to the potential for scaling or high growth across the entire portfolio.

### **The focus for intervention at the level of the enterprise - our ambition**

The analysis has indicated that there appears to be a particular challenge for enterprises in reaching the €3- €5m turnover 'barrier' (€10m for food companies) and a focus on companies within this cohort is required. It is estimated that there is the potential for approximately 30 percent of these companies to scale above these turnover levels.

There is also a substantial opportunity to work with our mid-tier companies to stimulate a significant step change in scale. We could see an uplift of 60 percent in the cohort of companies with turnover levels of over €100m today<sup>450</sup>. This is a very ambitious assessment of potential. There are considerable barriers to overcome and challenges facing the owner/manager and, as discussed above, the enterprise itself may be acquired (which has an impact on metrics). The emphasis is likely different depending on personal circumstance and company strategy.

### **The challenges facing the enterprise (owner/manager)**

The challenges facing enterprises on their scaling journey are multifaceted and particular to the company - which also means that the supports and advisory services provided need to be specific to the needs of the company at the particular stage of its scaling journey. The range of challenges involve, for example: leadership capabilities and ambition; risk appetite; succession planning (including in the case of family owned businesses); competence in sourcing strategic funding options (including for example equity and quasi-equity) and in acquisition strategies; tax implications; and personal circumstances. These present in different ways depending on the company's strategy, organisational structure, market focus and business model.

Accepting that the needs of enterprises are different, the evidence indicates that leadership ambition and competence are absolutely critical to a company's potential for sustainable accelerated growth. A specific focus on leadership development, cascading to the wider management development team is warranted in the first instance.

It is not intended to restrict any company (regardless of size or sector) from being supported by the agencies to scale beyond their current level. Each business development plan is assessed in its own right, and agency decisions are made on the basis of anticipated outcomes and additionality arising from the provision of appropriate levels and types of support. However, a specific focus is suggested on 'breaking the barrier' at the lower end of the spectrum on the one hand, and on 'realising a step change' on the other.

### **The broader challenges....**

In today's globalised environment the scaling agenda is not as simple as it might have been a decade ago when highlighted in *Ahead of the Curve*. Global business models are becoming increasingly complex and are fundamentally changing the stage at which companies become global, and there are different ways in which companies internationalise. Over the next decade,

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450 There are currently circa 55 companies in the Enterprise Ireland portfolio with turnover in excess of €100 million and 225 with turnover in excess of €20 million (and less than €100 million)

it is also likely that scaling will no longer be a policy consideration 'just' from the perspective of Irish owned enterprises, as IDA Ireland attracts companies at an earlier stage of their lifecycle.

### **Mobile business functions**

In general, larger scale entities will seek out the most appropriate locations from which to address markets, to access lower input costs and/or strategic assets. We are already seeing evidence of disaggregated supply chains and functions and activities such as R&D becoming mobile in some of our Irish owned enterprises. In these cases, Ireland is competing against other locations to win such investment. Although the strategic control of the Irish owned enterprise is likely to remain rooted here, decisions are made on the basis of business and strategic objectives and on delivering shareholder value and we cannot assume that an Irish owned entity will always chose to locate mobile investments in Ireland.

From a policy perspective, for these larger scale companies (which will likely be a relatively small number of companies overall) our value proposition and negotiation becomes similar to that used to influence FDI location investment decisions.

### **Outward direct investment**

Many Irish owned companies establish and/or acquire operations in overseas markets in order to access lower input costs, and/or to be closer to their primary customer (including in the case of sub-supply) or to reduce time to market<sup>451</sup>. It is important to point out however, that such strategic moves made by the Irish owned enterprise serve to enhance their competitiveness and the evidence indicates that these companies also continue to grow employment at home.

Although we cannot (and should not) provide direct financial supports for job creation in other jurisdictions, we need to acknowledge the business reality, and engage in strategic conversations with companies that are at this stage of growth. Considerations such as organisation structures (internationally), headquarter activities, locus of control, intellectual property (IP) management and exploitation, RD&I and new product introduction etc., are directly relevant to ensure that the economic return to Ireland is optimised and that the enterprise is sustainable over the longer term. Supports can be provided to stimulate investments in Ireland in strategic functions such as RD&I and shared services models and in developing skills and capabilities in acquisitions/IP exploitation etc. Our relative cost competitiveness is a key consideration in this regard.

### **Born globals and early stage internationalisation**

Many technology and/or internet services enterprises are globally mobile at a relatively early stage of their life-cycle and are, in effect, 'born global'<sup>452</sup>. While this offers a rich prospect for attracting FDI, it can present a challenge as we seek to scale Irish owned companies from an Irish base. This phenomenon is not necessarily new to Ireland. We know that many of our Irish owned software and technology companies in particular seek to establish overseas to gain access to end customers and/or to access a vibrant VC community and a dynamic

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451 As set out in Section C – Connectedness chapter, our analysis indicates that there has been considerable growth in ODI (outward direct investment) over the past decade. Latest CSO data for 2013 indicates that Irish owned entities employ circa 261,000 in overseas locations and realise €91 billion in turnover (sales)

452 Born globals can reach international markets and operate initially with relatively small teams that are scattered throughout the world - and connected through innovative use of technologies

entrepreneurial environment. However, as we look to the next decade, and as more companies than ever are likely to be internationally mobile at a much earlier stage of their life-cycle, we need to better understand the implications for our policy objectives to grow the contribution of Irish owned enterprises to employment, exports and economic expenditures. In this context, our business environment for entrepreneurs, technology infrastructures, access infrastructures, and funding environment are all critical to ensure that we (at least) retain a piece of their global footprint (and ideally their headquarters).

As IDA Ireland is now involved in attracting enterprises to invest in Ireland at an earlier stage in their growth lifecycle, the proposition to attract such investment and the supports needed are more akin to those offered by Enterprise Ireland. Such early stage investments will also likely increase the overall risk profile of IDA Ireland's portfolio of companies. It is important that this is an accepted part of our new approach and that, while every effort will be made to support the accelerated growth of these earlier stage enterprises on Ireland's shores, there are likely to be failures. For IDA Ireland a concerted focus on assisting these potentially high growth companies to scale quickly in a sustainable way will be required.

#### Trade sales and the IPO alternative....

Technology rich and innovative enterprises tend to be ripe targets for acquisitions and/or mergers. Larger scale enterprises can benefit significantly from acquiring 'de-risked' disruptive technology and new business model ventures driven by entrepreneurs<sup>453</sup>. Over the past number of years, there have been a number of acquisitions of Irish owned enterprises<sup>454</sup>. Although Ireland is a relatively small target market for cross-border M&A activity today, there is a likelihood of more activity here in the context of increased European based cross border M&A deals<sup>455</sup> and the mode of investment generally taken by 'newly active' emerging economies in FDI. From a policy perspective, it is important that there is structured engagement between the enterprise development agencies as and when such activity comes to light within their portfolio of companies.

In addition, a relatively small proportion of supported enterprises have had an initial public offering (IPO). In the context of the scaling agenda, we need also to deepen our understanding of owner/manager motivations for opting to sell and to facilitate informed discussions on the range of alternative options for growth (including profitability and reinvestment, equity/quasi-equity, IPO, alternative sources of funding, joint ventures, partnering, acquisitions, etc.).

#### Measuring and celebrating success

The approach taken currently to reporting on the performance of our (agency supported) Irish owned enterprises is focused on a number of key output measures including (gross and net) exports and (gross and net) job creation in Ireland. It is only in more recent years that any focus

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453 In the case of pharma companies, for example, the past number of years has seen significant M&A activity as they sought to complement their portfolio with more innovative bio-pharma products

454 On average is estimated that 15 agency supported Irish owned enterprises have been acquired by foreign owned companies over the period 2006-2011, peaking in 2007 and 2008

455 M&A activity in Ireland in 2013 was dominated by loan book sales, private equity and deals in financial services, pharma, biotech, energy and technology. The outlook for M&A activity in Ireland for 2014 and beyond is for increased levels of M&A activity based on global trends in M&A and renewed confidence in the Irish business environment. Source: Mergers and Acquisitions, Grant Thornton, November 2013



has been given to international sales/turnover (i.e. sales completed in overseas markets) and to employment created in overseas markets<sup>456</sup>. From the perspective of demonstrating the economic impact resulting from State investment, this is understandable. Nevertheless, from the perspective of fully reporting on the scale (and international reach) of our Irish owned enterprises, it falls considerably short. There is limited data available to increase our full understanding of the economic benefits arising to Ireland from ODI (e.g. in terms of repatriated profits).

Other factors include the fact that any reporting on scaling of Irish owned enterprises and relevant trend analysis is negatively impacted if/when an Irish owned enterprise is acquired by a foreign owned entity (may also involve a transfer of the company from the Enterprise Ireland portfolio into IDA Ireland's portfolio, which can result in an 'under-reporting' of Enterprise Ireland activity).

It is important too that we reflect the wider benefits arising when our Irish owned enterprises reach scale and/or achieve leadership positions in particular markets. An Irish owned enterprise that gains international visibility serves to raise the profile of Ireland as a good place from which to succeed in business - as a source of innovative, technology rich enterprises and as a source of entrepreneurial talent. A successful Irish owned enterprise serves as a demonstrator to budding entrepreneurs and to other businesses of what is possible (and often the owner/manager is willing to share experiences and help to short circuit the market entry journey for others).

This Enterprise Policy 2025 sets out a suite of measure(s) of Irish owned company performance, and we will keep under review what the most appropriate (and informative) measures should be over the coming decade (see Section F). We will (across Government), together with our agencies<sup>457</sup>, continue to promote the successes of Irish based entrepreneurs internationally.

### In conclusion

It is increasingly apparent that the scaling agenda involves multi-dimensional considerations. It is a complex area involving not only the ambition and/or risk appetite of the enterprise owner (and possible interventions to address market failures in this regard) but a much broader agenda that involves born globals, modes of internationalisation, global value networks and our focus (to date) on growth in exports as a key metric. The reality is that a proportion of the scale that can be realised by Irish owned enterprises will likely happen outside of Ireland.

It is also apparent that there is an even greater role for increased collaboration and cohesion with the enterprise development agencies (and others). The actions set out in Section C – Connectedness in relation to trade and investment are directly relevant, as is the proposed suite of metrics set out in Section B to assess economic outcomes and enterprise performance.

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456 Since 2010 CSO has collated data on the overseas activities of Irish affiliates and other relevant statistics, however the datasets are not linked currently which limits their usefulness. There is very limited and incomplete data available from the DJEI ABSEI in relation to ODI – see Section F

457 Since the publication of Making it Happen in 2010, Enterprise Ireland has considerably refreshed its web-site and profiles a number of Irish owned company success stories. There is potential for these to also be reflected more extensively in IDA commentary and promotion



	<b>Growing our Irish owned enterprises to scale</b>	
	Support a greater number of Irish owned enterprises to grow to scale at an accelerated rate, beyond their current turnover levels. This will require a tailoring of interventions to meet the specific needs of the scaling enterprise, with the objective of delivering to Ireland's enterprise policy objectives to grow exports and employment.	EI
	<i>Other factors are directly relevant as set out in this report, including access to finance, strategic use of funding options, leadership capabilities, and strengthening our understanding of modes of entry to international markets.</i>	

## FDI - delivering economic impact in a changing global environment

Foreign Direct Investment (FDI) has been a key contributor to Ireland's economic development and growth for a number of decades. Ireland continues to punch above its weight, attracting more investment per capita than most other developed countries. In 2013 Ireland was ranked 10<sup>th</sup> in terms of FDI project inflows globally, ahead of countries such as Germany, Spain and the Netherlands<sup>458</sup>. Ireland was one of the few countries that experienced an increase in FDI flows in 2012. Ireland's strong performance is also reflected in its top five ranking in Europe for projects won in a number of sectors and activities including pharmaceuticals, biotechnology, medical devices, software/IT services, semiconductors, shared services and contact centres.

Although Ireland has performed well over the past decades, we cannot be complacent. A number of countries operate quite aggressive FDI policies and strategies, with attractive offerings on property, tax, visas and other incentives. In this context, Ireland's relative cost competitiveness, corporate tax rate and available direct firm level financial supports remain critically important. However, in reality they are merely the table stakes and will be insufficient to substantially differentiate Ireland's offering for FDI over the next decade.

DJEI developed and published its *Policy Statement on Foreign Direct Investment in Ireland* in July 2014. The following draws from the relevant research, analysis, findings and policy actions, and data has been updated where relevant.

### Delivering economic benefit

Today, FDI employs over 250,000 people directly, including foreign owned enterprises that have invested in Ireland to serve the domestic market<sup>459</sup>. Agency supported foreign owned entities directly employed 160,768 people full-time in 2014 and a further 138,260 people indirectly<sup>460</sup>. They contributed 72 percent to total corporation tax revenues in 2012, spent €15.6 billion on materials and services sourced in Ireland (in 2013), and invested just over €1.3 billion in R&D

458 Global Investment Trends Monitor, No 15, 28 Jan 2014, UNCTAD

459 Business in Ireland 2012, CSO

460 A further 18,616 are employed on a part-time basis. The employment figures here refer to all agency supported foreign firms, including clients of IDA Ireland as well as a small number of Enterprise Ireland and Údarás na Gaeltachta client companies

(equating to 64 percent of all business expenditure in R&D<sup>461</sup>) in 2014. Nevertheless, despite this performance, there are some challenges. In terms of R&D, although foreign owned entities contribute the higher proportion toward BERD, there is a relatively small proportion of entities engaged in R&D activities.

Foreign owned entities also contribute in terms of knowledge transfer, enhanced productivity, higher order skills and management capability and provide a platform for entrepreneurship.

In 2014 of 197 investments overall, 55 percent of investments emanated from foreign owned entities already established here. While this points to the importance of continuing aftercare, it also highlights the continuing importance of raising Ireland's profile and offering in global locations where we are less well known. In terms of source markets, 49 percent of investments operating in Ireland as of 2014 are from the US and employ 69 percent of the total employed in foreign owned companies<sup>462</sup>. This level of reliance on the US as a source market underlines its strategic importance to Ireland. It also suggests that more can be achieved in other markets, especially in emerging markets. In addition, a relatively high sectoral concentration, while strengthening Ireland's comparative advantage in a number of areas, means that we need to continuously be alert to how these sectors are evolving and to seek out new areas of opportunity.

### Our ambition

Our overall objective is to have 2,180,000 million people in employment by 2020. FDI has an important role to play in delivering on this ambition, but it will be challenging in the context of the uncertain external environment and intensified global competition. Sustaining the levels of growth delivered by agency supported foreign owned companies over the past three years will require that Ireland delivers on the actions set out here. IDA Ireland's recently published strategy targets the delivery of an additional 35,000 net jobs by 2019 which aligns with the DJEI's FDI policy statement<sup>463</sup>. Related indirect employment would deliver an additional 28,350 jobs approximately<sup>464</sup>. This ambition also places a focus on sustaining jobs, so a continued focus on transformation of existing activities and capturing reinvestments is a critical element of Ireland's FDI policy<sup>465</sup>. Enterprise Ireland is responsible for the attraction of FDI in food and for working with foreign owned food entities as they develop their activities in Ireland.

Job creation remains high on the Government's agenda as we exit from a particularly challenging period of an economic downturn. Nevertheless, it is important to acknowledge that jobs are but one aspect of the range of benefits that FDI can bring, and that the policy focus on ensuring sustainable growth involves a wider perspective. Our ambition is that FDI will:

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461 R&D expenditure figures are based on a survey that includes both agency and non-agency supported enterprises; Business Expenditure on Research and Development (BERD) 2013/2014. The 2014 figures are estimates; CSO, 2015

462 DJEI Annual Employment Survey 2014 (DJEI calculations)

463 The Policy Statement on Foreign Direct Investment in Ireland asserted that, taking into account the Winning Abroad initiative, IDA Ireland can attract (and sustain) investments that will deliver between 42,000-45,000 direct net jobs in total over the period 2015-2020. IDA Ireland's strategy was informed by, and developed in the context of the FDI Policy Statement

464 Based on a multiplier of 1.81 (DJEI calculations)

465 The rate of job losses in foreign owned entities has seen a year on year decline since 2009, DJEI Annual Employment Survey 2014

- contribute to enhanced productivity and value add;
- develop capabilities and critical mass in sectors and will introduce new types of activity;
- enhance Ireland's innovative capabilities with a greater number of foreign owned enterprises across all sectors and activities engaging in RD&I;
- contribute through direct economy expenditures to indirect job creation in the domestic economy;
- enable access to global value chains for Irish owned companies; and
- optimise the potential contribution of FDI to regional economic development as part of cohesive regional spatial and economic strategies.

Inward investment can continue to make a substantial contribution to Ireland's future growth if we continue to create the right environment that anticipates and meets the needs of today's globalised businesses. The global trends set out earlier in this strategy demonstrate that we are operating in a constantly changing and intensely competitive environment. In this context, we cannot assume that investment will 'just happen' or that what we have to offer today will be continue to offer a compelling proposition over the next few years.

#### **A changing environment globally for FDI**

We are now operating in an environment where global competition for the attraction of FDI has intensified. There are new players coming into the picture that provide a competitive location of choice for potential investors. In 2013 FDI inflows to developing economies was valued in excess of €700 billion, the highest level ever recorded and accounting for 56 percent of global FDI flows in 2014<sup>466</sup>. These developing economies are also a source for mobile investment for which Ireland can compete. There remains considerable uncertainty in the global environment overall with continuing volatility in FDI flows, and flows into Europe and the EU have reduced substantially.

In this ever more competitive global economy, the motives for FDI are increasingly based on strategic asset seeking - such as technologies, customers and talent. This has led to increased instance of other modes of investment that include mergers and acquisitions (M&A) and partnerships with research and HEIs.

As alluded to above, a pervasive trend globally is the accelerating young economy dynamic. Companies are mobile at a much earlier stage in their lifecycle and need multi-territory presence for growth. IDA Ireland has expanded its focus to attract early stage high growth companies to invest in Ireland as they seek to address European (and other international) markets. This expanded role has implications for IDA's marketing proposition, and the need for access to a broader array of supports - more akin to those offered by Enterprise Ireland. The phenomenon of the dynamic Tech Hub is also relevant - not only from the perspective of attracting early stage companies, but also in terms of attracting mobile entrepreneurs (the role of Enterprise Ireland).

In terms of sectors, change is the constant theme as highlighted in the previous chapter - creating both challenges and opportunities for attracting FDI over the coming decade. Availability of talent features strongly in location selection, and the role of cities is becoming

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466 Global Investment Trends Monitor, No. 18, UNCTAD, 29 January 2015

increasingly evident. These factors are considered in greater detail in the earlier Section on Differentiators (including the chapters on Talent and Place-making).

Our national *Policy Statement on Foreign Direct Investment in Ireland*<sup>467</sup> has set out a range of actions, distinguishing between enhancing the Ireland 'product', and the role of IDA as Ireland's investment promotion agency. A synopsis of the actions/focus is set out in Table 7 overleaf. These actions align with the policy emphasis set out here - namely talent, innovativeness, place-making and connectedness - and are focused on those aspects that will attract mobile investments that will contribute to our objectives for sustainable growth. The FDI Policy Statement acknowledges that we need to maintain our efforts in addressing the table stakes<sup>468</sup>, including relative cost competitiveness, our fiscal regime, and investment in national and regional infrastructures.

	<b>Attracting, expanding and sustaining Foreign Direct Investment</b>	
	Implement the Policy Statement on Foreign Direct Investment in Ireland, and deliver on the IDA strategy <sup>469</sup> to attract and sustain investments that contribute to our national enterprise policy objectives.	DJEI/ IDA/EI

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467 DJEI, 2014

468 The term 'table-stakes' refers to the minimum prerequisites to attract FDI

469 Winning - Foreign Direct Investment 2015-2019, IDA Ireland, 2015

**Table 7** Synopsis of areas for action – Policy Statement on Foreign Direct Investment in Ireland

Strategic focus	Areas for action
<p><b>Building on strengths and positioning for new opportunities</b></p>	<p>Continued focus on company transformation and enhanced levels of cross-agency information and market intelligence sharing so that opportunities within and across these sectors are identified at an early stage</p> <p>Target increased levels of food and beverage investment<sup>470</sup></p> <p>Build globally competitive clusters and ecosystems for key sectors</p>
<p><b>Source markets</b></p>	<p>Strengthening the relationship with the US and diversifying Ireland's FDI portfolio esp. opportunities in emerging markets<sup>471</sup></p> <p>Positioning Ireland as a leading European location for start-ups and fast growing businesses</p>
<p><b>Nurturing key differentiators</b></p>	<p><b>Talent:</b> Develop and implement a National Talent Drive : involving a focus on human capital development and on broader factors that will attract and retain mobile talent</p> <p><b>Place-making:</b> Continue to develop credible propositions for our city regions, leveraging regionally based assets and potential (the Regional Action Plans are pertinent - see Section C - Place making)</p> <p>Further enhance the Dublin City Region - as a place to live, invest, grow a business and nurture innovation.</p> <p><b>Connected world leading research:</b> Reinforce Ireland's profile in terms of enterprise-aligned scientific excellence with impact (in line with the Research Prioritisation Exercise) and include ambitious targets to grow a defined number of national research centres that will conduct world leading research of relevance to key growth sectors in Ireland.</p>
<p><b>Business environment</b></p>	<p>Attain a top 5 international competitiveness ranking<sup>472</sup>;</p> <p>Prioritise capital investments to underpin the development and growth of Ireland's productive sectors;</p> <p>Maintain a competitive corporate tax regime that rewards productive investment;</p> <p>Work with market players to provide attractive property solutions.</p>

470 Enterprise Ireland is responsible for the attraction of FDI in food and working with food companies as they develop their activities in Ireland

471 Based on the tiered approach set out in the Review of the Trade, Tourism and Investment Strategy 2010-2015

472 In Enterprise 2025 we have set out the ambition to achieve a top three ranking amongst the most competitive small countries in the world

## Leveraging our distinctive enterprise base

Our policy emphasis on connectedness requires that we place increased emphasis on realising the benefits from our distinctive enterprise dynamic that boasts leading edge global players and technology and innovation rich agile enterprises. At a minimum a deeper coordination between the agencies is now needed than has been pursued over the past number of years.

There is a need for enhanced coordination in the following areas:

### Attracting overseas mobile entrepreneurs and early stage companies

From an enterprise policy perspective in terms of entrepreneurship, start-ups and early stage companies, ownership is much less of a differentiator than might have been the case heretofore.

Enterprise Ireland has responsibility for the attraction of mobile entrepreneurs to Ireland, and IDA Ireland for the attraction of companies that are at an early stage of internationalisation. It is likely that each agency can benefit from the knowledge and experience of the other. The broader suite of Enterprise Ireland internationalisation supports, accelerator programmes, and the VC funding environment are particularly relevant to the specific needs of the early stage foreign owned endeavours being targeted by IDA Ireland. We need to build on the current coordinated approaches in place to ensure that we are making optimal use of the respective strengths and offerings of the enterprise agencies and that separate responsibilities do not inadvertently result in a fragmented marketing message or fragmented support infrastructures.

	<p><b>Delivering a coordinated approach to attracting mobile entrepreneurs and emerging companies</b></p>	
	<p>Establish Ireland as a leading Start-up location for internationally mobile entrepreneurs through developing and promoting the Ireland value proposition that packages the elements to position Ireland as a leading European location for start-ups and fast growing businesses including: the funding environment; IP framework; structured access to Enterprise Ireland's overseas network and its market-led innovation programmes in commercialisation, technology development and diffusion and in internationalisation, marketing and leadership; an enhanced visa regime and extension of the tech visa to other areas of unmet demand in high skilled areas; and place and quality of life attributes etc.</p>	<p>DJEI/ EI/ IDA and DJE</p>

### Inter-firm relationships & clustering

As noted above, in the changing global dynamic of global value networks, enterprises engage with each other in a number of ways, including sourcing, partnerships (e.g. joint ventures), equity, patronage and collaboration (e.g. RD&I) and corporate venturing. There is likely to be greater M&A activity in Ireland, and Irish owned enterprises will internationalise in a variety of different ways. There is further potential for Ireland to leverage the fact that many leading edge global foreign transnational corporations are established here (accepting that the decision making and control is not necessarily vested in the operation here) to stimulate greater collaborations, partnerships and inter-firm relationships. There are inherent risks involved, particularly with regard to the potential acquisition of our technology rich enterprises. We will remain attuned to what is a reality of the business world, enhance our understanding of the motivations of our Irish owned enterprises and ensure that the guiding principle in any policy

action should be aimed at securing the optimum economic return for Ireland's future economic growth.

The need for a heightened policy approach to facilitating clustering activity has been highlighted in the chapter on Connectedness (Section C). Such initiatives require commitment from the agencies (including IDA Ireland, Enterprise Ireland, and Science Foundation Ireland) as well as the Higher Education Institutes, Research Institutes, Technology Centres and other key stakeholders in order to fully realise the benefits that can arise from genuine engagement between enterprises of differing scale and ownership and between enterprises and research institutes.

## Strengthening collaboration

Throughout this report, we have set out instances whereby greater collaboration between foreign and Irish owned enterprises and between enterprises, HEIs and the research base can be fostered. These are summarised below. We will:

- increase the number of enterprise collaborations with the research community supported by SFI and Enterprise Ireland and including IDA Ireland;
- increase sourcing of domestically produced goods and services by export oriented enterprises by 25 percent to reach at least €36 billion by 2020, which will, in turn, support job creation in the wider economy;
- stimulate increased engagement by enterprises with HEIs in regionally based skills fora;
- drive the implementation of a national step change in competitiveness that includes a focus on productivity, innovation, collaborating to compete and internationalisation and including peer-to-peer best practice sharing and networks<sup>473</sup>;
- collaborate and coordinate activities in-market, including engagement with the embassy network through local market development teams;
- coordinate the development of clustering activities of scale focused on clear objectives and with international visibility, and including collaborative enterprise responses to grand challenge approaches;
- deliver a coordinated approach to attracting mobile entrepreneurs and emerging companies; and
- identify and stimulate regionally based activities that will harness the full potential of the regions to create employment<sup>474</sup>.

We will make optimal use of the respective strengths and offerings of the enterprise agencies and will deliver a coherent and cohesive enterprise support framework. The agencies will define appropriate targets and metrics to drive and monitor progress across the range of collaborative activities both in terms of level of activity and value/impact.

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473 Refer also to Making it in Ireland, Manufacturing 2020, Forfás, 2013

474 As set out in the Regional Action Plans for Jobs (forthcoming), DJEI

## Concluding remarks

Changing external forces and the increasing interconnectedness in a globalised environment may require that we revisit our policy approach in the coming years. Distinctions based on ownership are becoming increasingly blurred. Aspects such as lifecycle stage and/or scale may be more informative in terms of our policy emphases. The agencies (and DJEI) will need to continuously review the focus, emphasis, primary responsibilities and areas that necessitate complementary and/or collaborative action.

Policy responsiveness and effective execution will make a real difference to Ireland's ambition to be the best place in which to succeed in business.





## The role of the agencies - supporting transformation and resilience

### Introduction

We are aware that the most impactful role for the State is to continue to enhance the business environment that encourages investment, entrepreneurship and growth. Nevertheless, the enterprise development agencies and the Local Enterprise Offices (LEOs) play a crucial role in delivering on enterprise policy objectives – in stimulating increased investments and delivering sustainable growth at the level of the enterprise and through focused investments in enhancing the business ecosystem.

Direct financial interventions to support capacity building (in terms of capital and employment) are primarily targeted at those companies that are exporting and/or have the potential to do so. This will remain as a key principle of our enterprise policy over the coming decade<sup>475</sup>. The emphasis of our policy interventions are increasingly focused on building capability within enterprises - to enhance leadership skills, productivity and the potential to innovate in order to deliver on our objectives for sustainable job creation and growth over the longer term (and which are aligned with EU policy objectives).

Focused investments are made by the agencies to strengthen the RD&I infrastructures (including national research centres, technology centres and gateway centres) and to enhance the VC funding environment.

Our policy over the next decade aims to strengthen a systems approach in terms of how we engage with enterprise and optimise the use of available supports to deliver greater economic impacts.

### The enterprise development agencies

There are a number of agencies that provide supports to enterprises, aimed at stimulating increased economic activity. These include IDA Ireland, Enterprise Ireland and Science Foundation Ireland that operate under the auspices of DJEI. In addition the Local Enterprise Offices (LEOs) (formerly the County Enterprise Boards) operate as the first stop shop for all small enterprises. The LEOs which have been integrated to Local Authorities now operate under the Department of Environment and Local Government although Enterprise Ireland continues to provide the overarching strategic policy direction and coordination services.

....and others....

Other bodies and agencies provide supports including for example Teagasc (primary production), Bord Bia (coordinated marketing of food products), the Irish Film Board (the film industry), Údarás na Gaeltachta and the Western Development Commission (both regionally focused), Sustainable Energy Authority of Ireland and the LEADER programme (focused on rural development). This is not an exhaustive listing, and serves to highlight the somewhat complex environment, from the perspective of the enterprise, that exists today. Each body has a

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475 The State plays a key role

particular mandate, and we need to ensure a cohesive, seamless and integrated delivery system and to caution against the potential for 'mission creep'<sup>476</sup>.

The following focuses primarily on the agencies that fall under the auspices of DJEI and the LEOs as the primary enterprise development agencies and offices.

While the enterprise development agencies and offices deliver to the overarching goal of enterprise and employment growth, they each have distinct mandates and client portfolio.

**Enterprise Ireland** is responsible for the development and growth of Irish owned enterprises in world markets and works in partnership with Irish owned enterprises to help them start, grow, innovate and win export sales on global markets<sup>477</sup>. Enterprise Ireland supports a company throughout its lifecycle - through from start-up to scaling. The agency adopts a holistic, developmental approach and supports are tailored to address the needs of the enterprise depending on its stage of development. In this context the suite of supports it offers is broad, spanning leadership, management development and training, internationalisation, productivity, RD&I, capital investment and access to finance. The agency has also played a key role in strengthening Ireland's VC environment. Enterprise Ireland's remit also extends to commercialisation of state funded research and to stimulating RD&I collaboration between companies, both foreign and Irish-owned, and with research institutes. It is also responsible for the attraction to Ireland of inward investment from foreign-owned food and beverage companies.

**IDA Ireland's** objective is to partner with potential and existing clients to help them establish or expand their operations in Ireland. IDA Ireland operates in an environment of intense competition with other countries and Investment Promotion Agencies. The mobile investment generally involves one or more business functions and seldom involves a fully vertically integrated operation with end-to-end responsibility and activities across the supply chain. IDA Ireland's transformational agenda aims to help foreign owned entities already based in Ireland to continuously reposition themselves to remain strategically important to the parent entity. The primary financial supports used to support this agenda include RD&I research, development and innovation, as well as training, capital and environmental supports<sup>478</sup>.

**Science Foundation Ireland (SFI)** has a specific mandate as the national foundation for investment in scientific and engineering research. It invests in academic researchers and research teams who are most likely to generate new knowledge, leading edge technologies and competitive enterprises in the fields of science, technology, engineering and maths (STEM). SFI has supported the establishment of a number of National Research Centres, aligned with the research priority areas set out in Ireland's research prioritisation exercise and smart specialisation strategy. SFI also promotes an awareness and understanding of the value of STEM to society and to the growth of the economy. SFI plays a key role in advancing collaborative

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476 For example, with Enterprise Ireland and Bord Bia in supporting food companies, with the enterprise development agencies and SEAI in terms of environmental supports, and with the LEOs and LEADER that have a regional (rural) focus

477 Enterprise Ireland also provides supports to foreign owned food and beverage enterprises and other enterprises engaged in the development of Ireland's natural resources

478 More recently the IDA is working with Enterprise Ireland, to develop an initiative to stimulate the adoption of Lean principles aimed at addressing the needs of a cohort of its client base and in response to Making it in Ireland, Manufacturing 2020, Forfás 2012

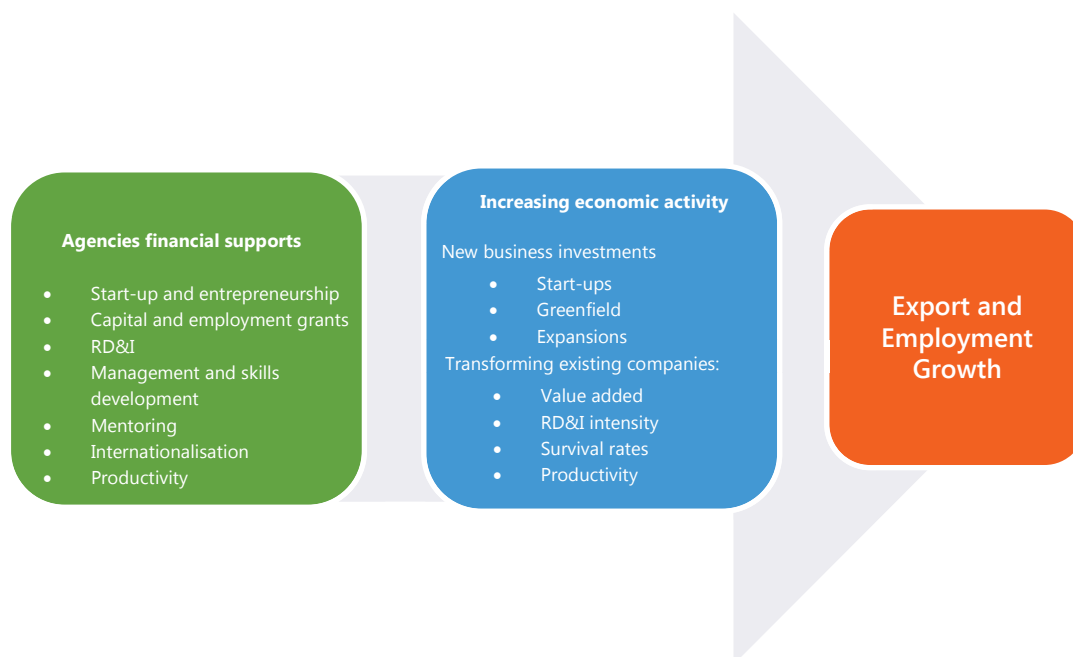
efforts among education, government, and enterprise and in enhancing Ireland's attractiveness for overseas investment.

LEOs provide a first stop shop for small enterprises. Financial supports are provided to start-ups (those employing less than 10 people) involved in manufacturing or internationally trading services, and a range of interventions including start-your-own business, mentor services etc., are more widely available. LEOs provide access to a range of supports to small entrepreneurs (i.e. employing less than 50) either directly or by way of signposting to relevant providers. Such supports include innovation vouchers, online trading vouchers, lean start and management development supports.

## Enterprise supports

State financial supports aim to stimulate additional economic activity - in the form of new business investments and/or through the transformation of existing companies to accelerate growth in exports and job creation. There is a suite of interventions available through the agencies aimed at stimulating increased and sustainable economic activity (Figure 12).

**Figure 12** Financial supports available from the enterprise development agencies – delivering outcomes and impact



Source: DJEI

The agency programmes operate within EU State Aid guidelines<sup>479</sup> which set parameters for the grant intensities permitted. For example, the regional aid guidelines (RAGs) have a direct

<sup>479</sup> The primary State aid categories relevant to enterprise supports relate to entrepreneurship, SMEs, research development & innovation, training, employment and risk capital, most of which fall under the

bearing on the provision of supports to incentivise employment creation in disadvantaged regions<sup>480</sup>. Modifications to the RAGs over recent years have effectively limited the use of capital and employment grants for large companies.

State aid refers to forms of public assistance using taxpayer funded resources, given to undertakings on a discretionary basis, with the potential to distort competition and affect trade between Member States of the European Union. Although state aid is banned because of its anti-competitive effects, categories of schemes are approved because their positive effects are considered to outweigh their negative impact. State aid rules can apply to grants, loans, tax breaks and/or the use or sale of a state asset for free or at less than the market price. The State Aid Modernisation (SAM) initiative focuses on ensuring that state aid policy is supportive of the goal to achieve a strong, dynamic, integrated and contestable single market; and to provide greater clarity, transparency, predictability and rationalisation of the procedures.

The guiding principle is that aid should only be given where there is an incentive effect, used only where there are genuine market or system failures and/or to redress regional disparities. The SAM process has also resulted in an increased focus on ex-ante evaluation that places an onus on Member States and agencies to ensure that the support schemes in place are within the relevant rules and are evaluated to ensure ongoing compliance.

In broad terms, the enterprise agency financial supports aim to either:

- **increase capacity** – to stimulate greenfield or expansion investments (increase the base of companies); or to
- **build capability** - in order to accelerate sustainable growth in job creation and/or exports, to strengthen resilience and/or to garner strategic responsibility within a global corporation (e.g. through leadership and management development, investments in RD&I, enhancing productivity and competitive positioning in an international context).

There is no 'either/or' in relation to the above objectives. The evaluations reinforce the need to ensure an appropriate balance between activities focused on capacity and capability building and the role of each in contributing to jobs and growth. Such a balance is based on the concept of a continuing spiral of '*competence building - capacity building – competence building....*' depending on life-cycle stage and baseline capability and/or strategic positioning within a corporate. The balance of supports may also be determined by the broader economic environment, by EU state aid guidelines and by the challenges and opportunities faced by enterprise at a particular point in time. Coming from an evidence base means that any such decisions are well informed.

The following enterprise policy aims will continue to apply over the coming years, with interventions being used by the agencies as appropriate:

- Broadening the base of companies that:
  - invest in Ireland (including start-ups, foreign direct investment, expansions, overseas entrepreneurs);

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General Block Exemption Regulation. Regional Aid Guidelines and De Minimis Aid can also apply (Appendix X)

480 Also, Horizon 2020 sets out objectives and targets at an EU level and also for Member States

- are exporting and/or have the potential to do so;
- engage and invest in RD&I to develop and deliver differentiated products, services and solutions and address new market opportunities; and/or
- are involved in value added and productive activities.
- Building depth in capability within enterprises:
  - in core competences that are not easily replicable and that enable them to build scale and to gain leadership positions in markets;
  - to set strategic, long term ambitious goals for growth with the ability to deliver on them;
  - in terms of Irish owned entities, strengthen strategic approaches to identifying and utilising appropriate sources of funding/financing at appropriate stages of development; and/or
  - in terms of foreign owned entities, to play a key strategic role within their corporation.

## Agency supports delivering impact

We need to ensure that our state interventions are delivering impact and stimulating additional economic activity. DJEI has recently completed a comprehensive programme of evaluations of individual agency programmes (including those provided by IDA Ireland, Enterprise Ireland, CEBs (now LEOs) and SFI interventions where there is a touch point with companies)<sup>481</sup>. The evaluations were undertaken across three broad thematic areas; start-ups and entrepreneurship; research, development and innovation; and business development supports<sup>482</sup>.

### A systematic programme of evaluations of agency supports – evidence of impact

The findings of the evaluations showed that the individual supports were deemed to be appropriate, efficient and effective<sup>483</sup>. Where relevant, a cost benefit analysis was undertaken and in all cases a positive return to the State for its investment was evidenced. It is not intended to detail all of the findings or recommendations of the individual programmes here, but by way of example<sup>484</sup>:

- turnover per employee for HPSUs increased over the evaluation period (2004-2010) by 114.8 percent. The comparator group (non HPSUs) showed an increase of 8.4 percent over the same period;

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481 Earlier evaluations were undertaken by Forfás on behalf of DJEI (Forfás is now integrated as the Strategic Policy Division within DJEI)

482 Reports for each thematic area, and for the individual interventions within each thematic area are available at [www.djei.ie](http://www.djei.ie)

483 With the exception of the relatively low cost eBMI (e-Business) intervention in that it was not possible to definitively attribute the outcomes to participation in the programme

484 The reader is advised not to directly make comparisons with regard to CBA - the methodologies are set out in the full reports available on [www.djei.ie](http://www.djei.ie)

- exports as a percentage of sales for HPSUs increased from 32.6 percent in 2004 to 79.8 percent in 2010. The comparator group saw fluctuations within the range of 35.6 percent and 38.9 percent;
- companies that received supports under the Enterprise Ireland Research, Technology and Innovation (RTI) programme increased strategic and technical skills levels and export intensity since they first obtained grant approval. An analysis of cost benefit indicates that a return of €1.82 was achieved in the year 2010 for every €1 of support. It is important to recognise that the evaluation spanned a period of economic boom and bust - for example, the CBA in the year 2007 (i.e. immediately prior to the recession) demonstrates a return of €3.34;
- Enterprise Ireland company expansion supports estimate a return of €2.81 for every €1 approved. Although not always possible to quantify, the evaluations evidenced significant behavioural additionality identified in leadership ambition and strategic capabilities, skills and firm survival rates;
- the IDA Ireland RD&I initiative shows that a return of €5 was achieved in 2009 for every €1 of state investment, and that the programme delivered on its objectives to increase the embeddedness of foreign subsidiaries in Ireland;
- the SFI, Centres for Science, Engineering and Technology (CSETs) led to a step change in the number and depth of relationships between academics and the business community in Ireland and an increase in the quality of research being undertaken here in Ireland; and at the time of the evaluation (2012) circa 70 percent of industrial participants had made use of, or planned to make use of, research centre outputs; and
- lean client companies had an annual productivity value that was of the order of €37,000 per employee higher than in the control group<sup>485</sup>. This likely underestimates the longer term impact, given that the analysis cannot pick up any programme effects on capacity increases (for the same inputs) that have yet to impact on sales. The econometric analysis also revealed that the increase in productivity was not at the expense of jobs.

The evaluations have informed and will continue to inform the design and development of individual interventions to ensure enhanced effectiveness and efficiency.

### An overarching perspective – informed by evaluation

A synthesis of the programme of evaluations was completed in 2015<sup>486</sup>. The overarching analysis complemented the individual programme evaluations and demonstrated that the agency assisted enterprises demonstrated resilience and strong performance relative to the total enterprise base.

The enterprise development agencies (IDA Ireland and Enterprise Ireland) delivered an increase in net employment of 25,616 over the past three years (2012 -2014) since the launch of the Action Plan for Jobs process<sup>487</sup>. Overall, within the agency client base the enterprises that

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485 Based on sales per employee and based on an analysis primarily of the LeanStart programme. Companies engaging in LeanPlus and LeanTransform were at earlier phase of their specific project and therefore not amenable to ex-post analysis

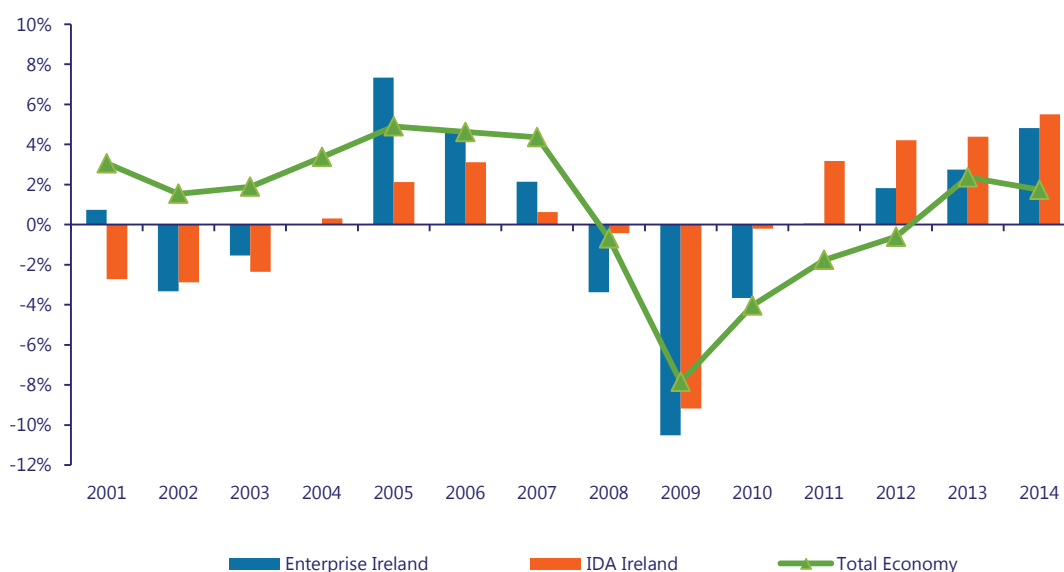
486 Evaluation of State Supports for Enterprise, Synthesis and Conclusions, DJEI, 2015

487 DJEI Annual Employment Survey 2014

received supports demonstrated greater resilience throughout the recessionary years, in that they recovered at a faster pace and greater rate than the cohort that did not<sup>488</sup>.

Taking a look at the pre-post boom periods (2001-2014) agency client companies demonstrated the ability to bounce back at a faster rate than the overall economy in terms of annual employment growth (Figure 13). Employment growth in the agency firms was behind the national average from 2001 to 2007, reflecting the very strong growth in the domestic sector, particularly in more labour intensive areas such as construction and retail over this period, in addition to the challenging international trading conditions in the early part the decade<sup>489</sup>.

**Figure 13 Annual employment growth – IDA Ireland, Enterprise Ireland firms & total economy 2001-2014**



Source: CSO QNHS, DJEI Annual Employment Survey

The employment impacts of the collapse in the domestic economy and the crisis in international markets are evident in 2008-2009. Notably, in a reverse of the trend from 2001-2007, employment growth in the exporting sectors has been higher than the wider economy since 2009. It would appear that there is a lag between employment growth and growth in exports, which is expected as firms use up existing capacity before increasing employment.

Enterprise Ireland and IDA Ireland companies exhibited strong recovery in exports in 2010 and 2011 given the low base in 2009 (Figure 14). Enterprise Ireland supported companies have been growing exports at a faster rate than total economy exports<sup>490</sup>. This increase in export growth is now translating into strong employment growth.

488 Evaluation of State Supports for Enterprise, Synthesis and Conclusions, DJEI, 2015

489 It should be noted that Enterprise Ireland began to work with the contracting construction sector in 2008 to promote the internationalisation of the sector

490 Total economy exports include e.g. primary production, bulk commodities and other merchandise and services that are not generated by the enterprise agency supported cohort of companies



It is important to acknowledge that transformational change is vital if a company is (even) to sustain existing employment when operating in a fast paced and intensely competitive environment. In this context, we may not always see a direct increase in net job creation particularly in the short term as enterprises are building capabilities in leadership, management and/or innovation for example.

**Figure 14 Percentage growth in exports – IDA Ireland, Enterprise Ireland firms, & total economy exports 2001-2014**



Source: CSO Balance of Payments, DJEI Annual Business Survey of Economic Impact

An analysis of churn provides evidence of strengthened resilience and sustained employment within the agency client cohort. Churn looks at gross job losses taken as a percent of the previous year employment base. In the case of Enterprise Ireland's portfolio churn has decreased from a peak of 16.9 percent in 2009 to 6.5 percent in 2014. Even in 2006-2007, when employment was strong, the level of gross job losses was at 8 to 9 percent, indicating that Enterprise Ireland companies on the whole are now sustaining more employment than in previous years. The same analysis of IDA Ireland's client portfolio shows that gross job losses decreased from a peak of 14.9 percent in 2009 to 6.5 percent in 2014. And similarly, in the peak employment years the level was between 8.8 and 10.1 percent.

### A suite of supports – tailored to deliver greater impact

The evaluations serve to highlight the specific role that each intervention plays within the overall enterprise policy context. The agencies take a company centric approach and tailor support to company need and strategic development to deliver economic impact.

The enterprise cohort is different for each of the agencies and therefore so too is the range, rationale and objective of each direct intervention. Even within the agency client bases, there is a range of companies of very different scale, strategic ambition and life-cycle stage. In this regard, having a suite of supports available to companies depending on size and stage of development is appropriate – and there is no compelling evidence to support a pre-defined sequencing and/or combination of supports. Nevertheless, our evaluations and review has highlighted a

number of aspects that inform the way in which this system of supports can be used judiciously to deliver greater economic activity and longer term sustainable growth.

### **The importance of extending an active and competitive company base**

We need to continuously incentivise new company formation and first time investment (including start-up and greenfield investment) focusing on improving the survival rates and longer term sustainability. Our aim is to deliver more in terms of an active and competitive company base that demonstrates the ability to scale on international markets, and (in terms of foreign owned enterprises) to play a strategic role within the overall corporation. The evaluations indicate significant value in those supports provided by the LEOs, Enterprise Ireland and IDA Ireland which stimulate new investments. Interventions which incentivise behavioural change within existing companies and enhance their competitiveness so that they engage in 'new for them' activities, such as RD&I and/or productivity enhancements, are crucial in terms of broadening and refreshing the client bases, and will continue to be part of the intervention mix.

### **The importance of capability building from the outset**

Companies at the very early stages of development that have engaged in management development and internationalisation have much better growth outcomes relative to the general population<sup>491</sup>. Consideration should be given by the LEOs and by Enterprise Ireland to ensure that appropriate capability building supports such as mentor services and/or management development are provided either in advance of any other financial incentives and/or as part of an overall capacity building financial support package (i.e. 'smart' money). Such a focus would also serve to deliver on the ambition set out in here to strengthen the survival rates of start-ups.

### **A continuing and concerted approach to building leadership and management capabilities**

The leadership/management development and skills measures within Enterprise Ireland account for relatively high proportion of total projects (30 percent) but a relatively small amount of total approvals expenditure (11 percent), which suggests a relatively low cost compared to other measures. The individual evaluations demonstrate a significant impact in terms of mind-set change, levels of ambition and strategic capability to deliver on an accelerated growth path.

### **A focus on competitiveness - transformational change**

The Government has a role to play in terms of enhancing the business environment and in addressing relative cost competitiveness in areas where it can exert direct influence (See Section E – Excelling in getting the basics right). We need a continued focus on delivering transformational change and competitiveness at the level of the enterprise, targeting areas where there is less take-up of interventions to date including e.g. Lean, RD&I and Innovation vouchers (technology adoption) across the enterprise base and including both Irish owned and foreign owned entities.

### **The need to review (and refresh) offerings for investment and re-investment in light of intensified international competition**

IDA Ireland is now attracting foreign enterprises that are at an earlier (or first) stage of internationalisation. It is likely that the broader range of internationalisation activities, accelerator programmes and sources of funding (e.g. VC funds) are more pertinent to this

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<sup>491</sup> Based on more detailed meta-analysis undertaken by DJEI of companies employing less than 10 people

cohort than has been the case heretofore for IDA Ireland client companies. For this cohort a bundling and/or packaging of interventions (and including both financial supports and advisory/brokering supports) likely presents a more compelling proposition encompassing, for example, Lean, RD&I (including innovation in services and business process), market access, environmental and training supports.

### Developing strategic client engagement models

As discussed above, the agencies develop strong working relationships with their client base. As companies continue on a growth path and/or compete against affiliates for the next wave of investment, it is important that the State plays a supportive role. Sectors and activities continuously evolve, and so too do the companies and their way of doing business. Investment, therefore, is not a 'one-off', but a continual spiral of improvement involving capability building - capacity building - capability building ....etc.

The analysis points to the challenge faced by the enterprise development agencies to target supports where it is likely to generate optimum return on state investment, deliver job creation and export growth and where it results in a better outcome than would have been achieved without intervention. The nature, ambition and capabilities of the entities differ (within both Enterprise Ireland and IDA portfolios); enterprises are at a different scale and stage of lifecycle development; the opportunities and challenges are company specific and the agencies operate with limited resources.

The analysis points to: high returns achieved when dealing with companies of scale (as evidenced in IDA Ireland's RD&I programme evaluation); greater returns achieved from bundling supports and building longer term relationships; the increase in numbers and proportion of companies of scale within Enterprise Ireland's portfolio as a result of continuous engagement; the sustained impact resulting from investment in leadership development; as well as the success of lower value interventions in broadening the base and activity of enterprises.

Based on the analysis and findings of the overall suite of evaluations, the agencies are better informed as to how to develop a more strategic and targeted approach to working with its client cohort. This would involve, for example considering when and where an intense engagement model would be of value; in dealing with the broader range of needs of early stage foreign owned entities; in working with more mature entities on transformation; in sequencing and/or combining supports more effectively etc.

### A complex environment?

Small companies in particular point to a complexity in terms of what is on offer. This complexity (perceived or otherwise) may be exacerbated to some extent by marketing approaches that 'brand' certain interventions to attract a particular cohort of prospective clients – e.g. to attract more female entrepreneurs, or focused on a specific region or sector. Other sources cite the range of State Bodies that can serve to add to the complexity for small enterprises and start-ups in particular including e.g. BICs, LEADER, IoTs etc., as well as a range of sector specific and/or regionally based bodies<sup>492</sup>. This issue is one that has been cited for a long number of years, and some attempts have been made to address it. The Government's SME support tool<sup>493</sup> aims to

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492 Including for example, Bord Bia, Irish Film Board, Fáilte Ireland, Western Development Commission, Údarás na Gaeltachta, Bord Bia, Irish Film Board, etc.

493 <https://www.localenterprise.ie/smeonlinetool/businessdetails.aspx>

guide SMEs to the most appropriate agency. Although Enterprise Ireland has made some progress in streamlining its suite of offers, there is scope to further simplify the menu of options available for start-ups and early stage entities. It is also crucial that relevant Development Advisors within Enterprise Ireland and the LEOs are adequately equipped and can signpost to other relevant service providers if/as necessary (including for example Skillnets).

Increasingly, enterprises are also citing the challenge in navigating the research infrastructure environment - which from their perspective can be daunting and unclear as to 'what is what' and includes National Research Centres, Technology Centres, Gateway Centres. Some progress is being made to address this and Knowledge Transfer Ireland is a significant initiative in this regard.

### An integrated and collaborative approach

The enterprise agencies play a key role in stimulating investments, economic activity and accelerated growth above that which would be achieved without direct intervention. At the same time, the business environment is becoming increasingly complex, and the needs of a company differ depending on stage of its development, scale and strategic ambition.

Our analysis demonstrates that there is a comprehensive suite of supports available, and that the way in which we use such supports – appropriate to the needs of the enterprise, and focused on delivering on defined objectives - is important in terms of adding value. Nevertheless, from the perspective of the enterprise there is scope to improve the alignment and coherence of the range of services available across all of the agencies charged with supporting enterprise development.

We will ensure that we are making optimal use of the respective strengths and offerings of the enterprise development agencies and that separate responsibilities do not compromise a coherent and cohesive enterprise support framework.

	<b>An integrated and collaborative approach to supporting enterprises</b>	
	<p>Deliver an integrated approach to meeting enterprise needs, ensuring that the range of services on offer across the development agencies as a whole is aligned and coherent to business, in areas such as linkages, entrepreneurship, leadership and management development, sectoral ecosystem development, and trade and investment promotion. This includes agencies of other Departments such as Bord Bia in relation to food companies, Fáilte Ireland in relation to tourism, and of entities such as the LEOs, BICs, LEADER and IoTs in relation to small firms and start-ups nationally and regionally.</p>	<p>DJEI and others</p>

### Strengthening evaluations: best practice in a complex environment

As the OECD points out, evaluation of enterprise policy is relatively nascent and has some catching up to do with other policy areas (including for example, infrastructure investment or health)<sup>494</sup>. In this context, the suite of evaluations of enterprise supports completed by DJEI and Forfás over recent years has helped to advance evaluations practice and capabilities

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494 Evaluation of Industrial Policy: Methodological Issues and Policy Lessons, Warwick, K. and A. Nolan, OECD Science, Technology and Industry Policy Papers, No. 16, OECD Publishing, 2014

considerably. The evaluations have served to strengthen the development of individual policy interventions and have provided robust evidence to demonstrate that value for money is being achieved in supporting enterprise development. The approach taken also serves to highlight the complexity involved in isolating the impact of an individual programme from within the overall system.

The development of enterprise supports and policies over the coming decade in Ireland should continue to be informed by strong evidence, informed by robust and independent evaluations. As enterprise policy itself evolves toward a systems approach, Ireland is now well positioned to build on its expertise in managing complexity. Nevertheless the evaluations have highlighted a number of areas for focus in the future development of evaluations practice and enterprise policy development:

- embedding a culture of evaluations;
- advancing evaluation methodologies and approaches;
- managing complexity; and
- developmental evaluation.

#### Further embedding a culture of evaluations

While the agencies have detailed ex-ante evaluation and appraisal at project level in the case of IDA or investment plans in the case of Enterprise Ireland, information at higher programme level is less consistent. Ex ante evaluation at the design and or re-design stages of an intervention requires a clear statement setting out: the enterprise policy context; the theory of change and specific programme objectives; the rationale for State intervention; how the support is intended to operate within the overall system of supports; and its interaction or synergies with other supports<sup>495</sup>.

In terms of objectives, although the ultimate aim of agency programmes is to deliver enhanced export and employment growth, the *specific* programme may seek to achieve this, by for example, increasing R&D activity (with R&D intensity identified as a metric), enhancing productivity (with output per head used as a metric), or strengthening survival rates. More specificity is required in setting out objectives for the individual programme and the metrics that will be used to determine impact and/or outcomes.

Some progress has been made in this regard and Enterprise Ireland is committed to continuous evaluation. While IDA Ireland carries out evaluation at project level, consideration should be given to improving management information systems to allow for routine monitoring at a programme level.

#### Ensuring independence in evaluations

It is appropriate that each agency continues to undertake regular evaluation of its own programmes, including ex-ante, interim and ex-post evaluations. At the same time, it is crucial for the integrity of the evaluations that they are conducted in a manner that is robust, independent and stands up to external scrutiny.

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495 Ex ante evaluation should be undertaken in line with the DJEI evaluation framework to ensure consistency of approach

## Advancing evaluation methodologies and approaches

### Managing complexity

Evaluating the direct supports is important for ensuring the individual programmes are appropriate, functioning as they should, achieving specific objectives and delivering additionality. The evaluations undertaken to date recognise that the agency client companies have access to a range of financial supports and to a range of 'soft supports' including advisory supports from the agencies, peer networks, opportunities for collaboration and access to overseas office networks. Given the numerous variables which are difficult to control for<sup>496</sup>, the evaluation of enterprise supports is arguably more complicated than, for example, evaluation of infrastructure projects where the parameters are more clearly defined.

The evaluations of agency supports undertaken to date can be categorised as sitting somewhere in between the OECD 'complicated' and 'complex and complicated' type of evaluation, in that the individual programme evaluations were grouped together as part of an overall approach to the development and evaluation of enterprise policy. The OECD sees these types of evaluation as more informative compared to a 'simple' approach to evaluations (Table 8).

**Table 8** Two-way classification of the industrial policy evaluation challenge

	Single measure	Package of measures
<b>Standard / well understood</b>	Simple – use rigorous counterfactuals, control groups, state of the art estimation techniques	Complicated – apply single measure techniques to components and where possible, take account of interactions and multiple treatments and influences
<b>Uncertain / complex</b>	Complex – use experimental methods, test/learn/adapt	Complex and complicated. Counterfactuals may not be possible. Apply single measure techniques to components, take account of interactions and systemic effects, use qualitative measures and more informal methods of learning by doing

Source: OECD, Evaluation of Industrial Policy, 2014

In addition to assessing the individual programme appropriateness, effectiveness and efficiency, the programme evaluations helped to better understand how supports interact with each other, spill over effects and unintended consequences. For example, there were significant capability building impacts evident in the evaluations of RD&I and higher additionality arising from combinations of supports was evidenced in the internationalisation programmes evaluation. Furthermore, some of the evaluations assessed partial deadweight to provide a more nuanced approach to assessing impact and additionality<sup>497</sup>.

<sup>496</sup> For example ambition, strategic capabilities, flexibility, networks in addition to advisory and soft supports

<sup>497</sup> As developed by Lenihan, 2004, Evaluating Irish industrial policy in terms of deadweight and displacement: a quantitative methodological approach, Applied Economics, Vol 36, Issue 3, pp 229-252

Systems thinking also requires that evaluations of state interventions focus not only on the quantifiable and the monetary benefits but also deepens our understanding of wider economic impacts (e.g. multiplier effects and clustering impacts) and behavioural change. For example, behavioural effects such as increasing enterprise level capabilities, collaboration or incentivising strategic change are now clear aims of state intervention beyond a simple calculation of economic return. This systems thinking adds considerable complexity for meaningful evaluations.

In this more complex and complicated environment, OECD recommend that a variety of evaluation approaches may be required. This includes, programme logic model evaluation and greater use of qualitative methods, case studies, analysis of secondary data and testing new forms of evaluation such as hypothesis testing.

### Developmental evaluation

Linked to the need to manage complexity, there is potential to experiment with more 'developmental' forms of evaluation methodologies within the existing DJEI evaluation framework. The developmental evaluation concept is congruous with the notion of the 'experimental State' which situates evaluation as a key policy tool in developing modern enterprise and innovation policy. Such approaches could be beneficial where new models of engagement with enterprises are developed and as the systems approach in enterprise policy itself evolves, for example, in the areas of clustering, peer-to-peer networks, or one-to-many interventions.

Developmental evaluation techniques include randomised control trials<sup>498</sup> and hypothesis testing. Randomised control trials are more appropriate in pilot programmes that may be rolled out on a much larger scale. Questions regarding selection or fairness in approach can be counteracted through a phased introduction of a scheme.

Hypothesis testing or theory-based evaluation could be particularly useful in smaller programmes, where 4-5 distinct measurable hypotheses about how the programme will impact (e.g. increases private sector RD&I, more public-private partnerships) can be 'checked' periodically. This is a short, sharp, less resource intensive approach whereby a programme can be evaluated at a higher level but with quite a good degree of certainty that the programme is doing its job. Where the hypotheses are not acting as intended when checked, a more in-depth evaluation can proceed if necessary. The OECD has pointed to a potential template for such an approach<sup>499</sup>.

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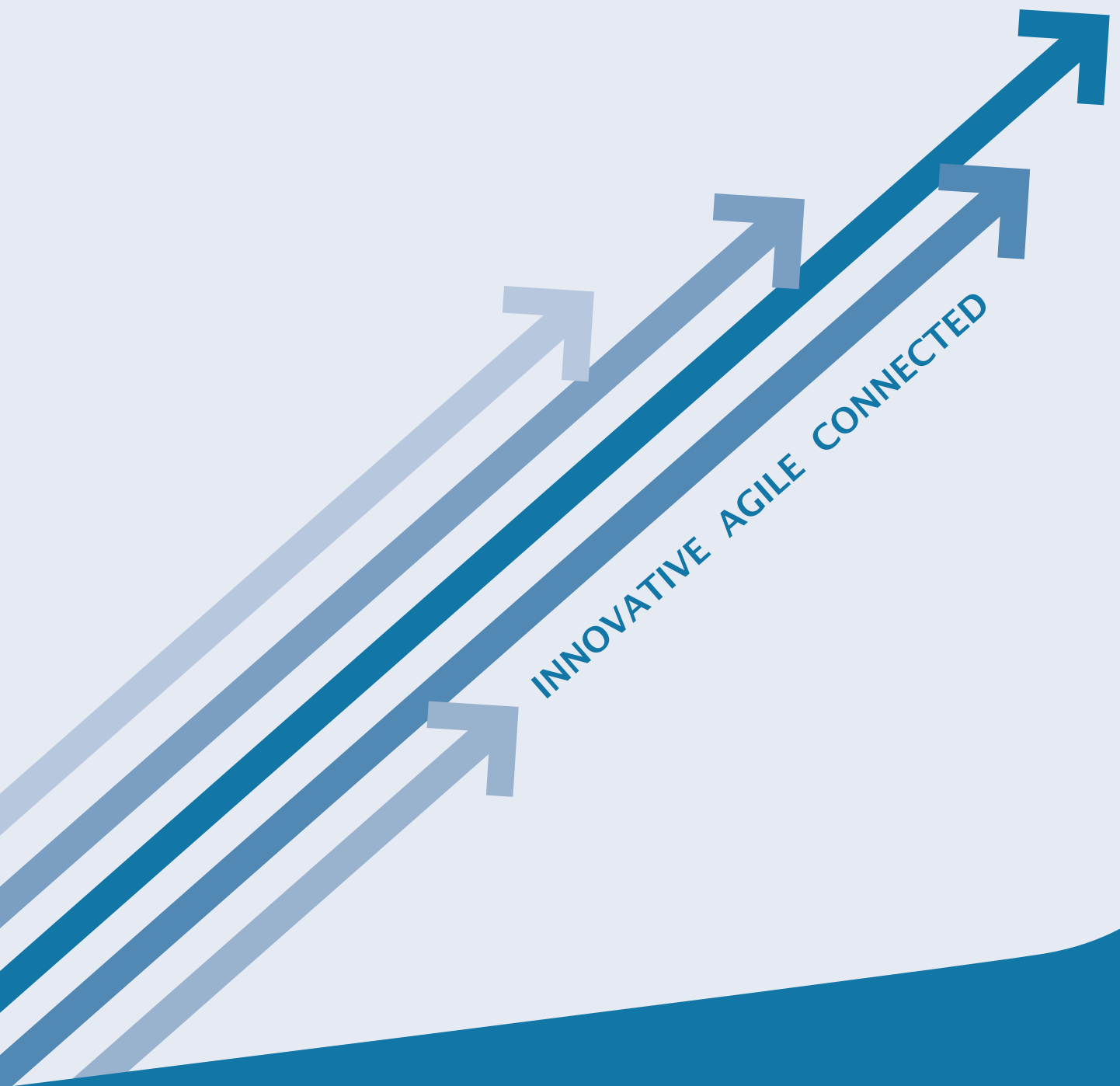
498 Randomised control trials involve randomly awarding supports to some applicants and declining to others and tracking the 'treated' versus non-treated group performance thereafter relative to the programme objectives. There may be challenges in implementing in the context of a relatively small enterprise base, state aid and regulatory and legislative issues would need to be considered

499 Evaluation of Industrial Policy: Methodological Issues and Policy Lessons, Warwick, K. and A. Nolan, OECD Science, Technology and Industry Policy Papers, No. 16, OECD Publishing, 2014

	<p><b>Embedding a system of evidence based policy development to maximise economic impact arising from state intervention</b></p>	
	<p>In the immediate term:</p> <ul style="list-style-type: none"> <li>▪ undertake an evaluation/review of Ireland’s trade and investment promotional activities overseas as part of the overall system to stimulate trade and investment; and</li> <li>▪ using the concept of developmental evaluation, identify an appropriate intervention in the short term and undertake an ex-ante review (An example might include the proposed clustering initiatives or grand challenges approach).</li> </ul>	<p>DJEI</p> <p>DJEI</p>







# Section E

Excelling in getting the basics right



## Finance for growth

### Introduction

This chapter looks at Ireland's funding environment for enterprise and sets out our ambition within the context of Enterprise Policy 2025 aimed at supporting a competitive, innovative enterprise base over the coming decade.

### The funding environment

Finance is the lifeblood of every business. It is needed at every stage of the business development lifecycle from the start-up phase through to growth and expansion. Enterprises need access to finance for working capital and to fund expansion and growth. In order to remain competitive enterprises need to invest to enhance productivity and skills, to increase capacity, to develop new products and to access new markets.

The international financial crisis and the systemic problems within our national banking system together created an extremely challenging environment for SMEs in relation to accessing finance. The challenges facing SMEs in Ireland are the product of a complex interplay of demand and supply side factors. Both pre- and post-crisis, Irish SMEs are among the most reliant on bank financing in Europe<sup>500</sup>. Consequently Irish SMEs have been disproportionately exposed to the weaknesses in the banking sector. Much work has been done over recent years to disentangle the demand and supply side factors, to redress the many issues that impeded a healthy flow of credit and to encourage increased and appropriate lending to business. Over the period of Enterprise Policy 2025 there will be a continuing need to ensure:

- competition in the banking market; and
- the availability of increased access to alternative sources of non-bank funding.

This is critical if Irish companies are to continue to create sustainable employment and to maximise the opportunities available to them across global markets.

In addition, if Irish companies are to grow and compete in international markets, we need to develop a stronger equity culture and access to equity as part of a broader mix of financing options overall. While equity finance is not suitable for all enterprises (which is reflective of the situation across the EU), it is an important element of the financial infrastructure needed by Irish business and we need to ensure firms compete on a level playing field. Equity finance can be raised through individuals, business angels, venture capitalists and private equity funds. There has been greater focus at European level on stimulating investments and strengthening capital markets and in this context the Action Plan for the Capital Markets Union (CMU) was published on 30<sup>th</sup> September 2015<sup>501</sup>.

The access to finance landscape does not operate in a vacuum and the interlinkages between the funding environment and the tax code should not be underestimated. We need to ensure

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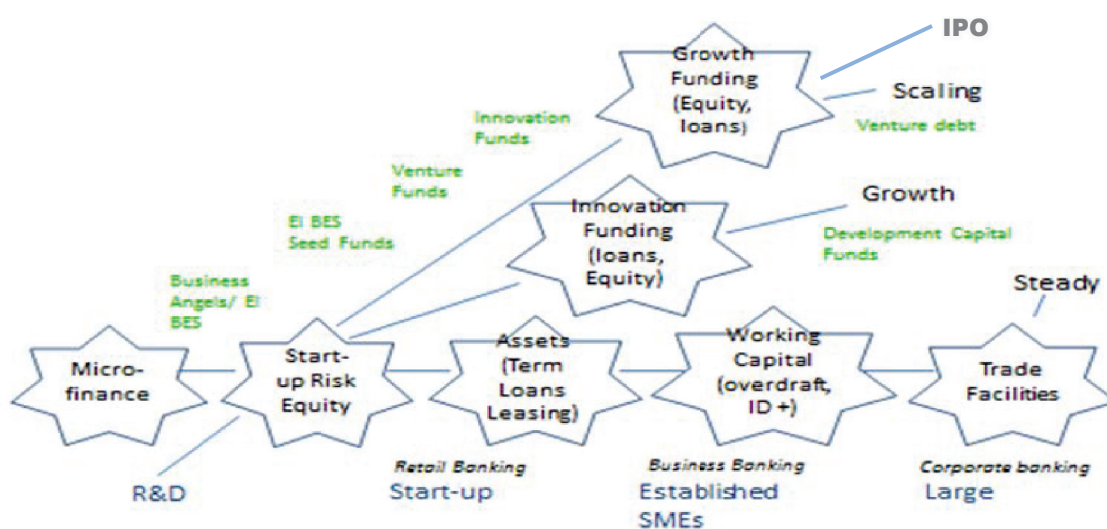
500 The importance of banks in SME financing: Ireland in a European context, M. Lawless, F. McCann and C.O'Toole, Central Bank of Ireland, Economic Letter Series, 2013

501 [http://europa.eu/rapid/press-release\\_IP-15-5731\\_en.htm](http://europa.eu/rapid/press-release_IP-15-5731_en.htm)

that Ireland has an internationally competitive tax regime that promotes investment in Irish companies, managed risk taking, and entrepreneurship and facilitates generational transfer (see later chapter on taxation policy).

The nature and mix of funding sources required by a business entity differs along the business lifecycle. In general the level of investment and nature of funding is relevant to stage of development, market orientation and/or business strategy of the enterprise. A simplified overview is presented in figure 9, accepting that funding decisions are company specific and influenced by a number of parameters.

Figure 9 Finance continuum for indigenous innovative exporting firms



## Recent initiatives - an evolving landscape

The State's involvement in the funding environment is aimed at maximising economic development and, where necessary, is designed to redress market failures, and drive competitiveness and innovation. The aim is to ensure that all sustainable business opportunities do not falter as a result of being unable to access requisite finance. Since 2011 Government policy has focused on supporting enterprises in accessing an appropriate supply of financing from both bank and non-bank sources. A number of initiatives have been introduced to increase the availability of access to finance for SMEs and to contribute to the evolution of a more effective institutional architecture overall, including the:

- introduction of a risk sharing State backed Credit Guarantee Scheme supporting an increase in lending by the domestic banks;
- establishment of Micro Finance Ireland in September 2012, supporting lending up to €25,000;
- establishment of the Seed and Venture Capital Scheme (2013-2018) to support the creation of new funds through open calls for expressions of interest;

- establishment of three funds focused on investing in medium sized enterprises developed under Enterprise Ireland's Development Capital Scheme Strategy to support the emergence of a private equity market in Ireland;
- establishment of Innovation Fund Ireland, supporting an increase in the availability of international venture capital;
- establishment of the Credit Review Office (CRO) to help SME or farm borrowers who have an application for credit of up to €3m declined or reduced, and who feel that they have a viable business proposition. The CRO also looks at cases where borrowers feel that the terms and conditions of their existing loan, or a new loan offer, are unfairly onerous or have been unreasonably changed to their detriment;
- establishment of the Strategic Banking Corporation of Ireland (SBCI)<sup>502</sup> in September 2014, which operates as a wholesale lending institution. €400 million of the available €800 million funds has already been made available through AIB and Bank of Ireland to supports SMEs. The SBCI will also help fund new entrants and alternative providers of finance to increase competition in the marketplace for SME finance. The SBCI is in discussions with other banks and a number of non-bank providers of finance to provide products such as invoice discounting, leasing and asset based finance in order to broaden the funding options available to the SME sector. An immediate benefit of the SBCI has been to increase the availability of competitively priced loans for support investment and working capital; and the
- establishment of the Ireland Strategic Investment Fund (ISIF)<sup>503</sup> which will operate as a sovereign development fund with the capacity to invest €7.4 billion<sup>504</sup> supporting the Government's economic strategy through commercial investment.

In addition, in order to communicate the enhanced range of financial supports available to business the 'Supporting SMEs' online tool and its promotion through the web portal [actionplanforjobs.ie](http://actionplanforjobs.ie) provides access to information on over 80 Government business supports across over 30 Departments and Agencies through one easily navigable website<sup>505</sup>.

Work is ongoing across a number of areas to further enhance the funding landscape. The Department of Finance (DoF) and DJEI are advanced in the development of an integrated export finance strategy with financing products and platforms being developed by the SBCI and the ISIF in conjunction with Enterprise Ireland<sup>506</sup>.

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502 Established as a private company with the Minister for Finance as the sole shareholder. Funding for the SBCI has been provided from KfW (the German State Development Bank), the European Investment Bank and the Ireland Strategic Investment Fund (ISIF)

503 Legislation was passed to transition the National Pensions Reserve Fund (NPRF) into the ISIF. The ISIF is a new fund to which the assets of the NPRF were transferred, involving €7.5 billion of funding available for investment. ISIF has the ability to participate in all levels of a project or company's capital structure including senior debt, mezzanine debt, traditional private equity (either direct or via an investee fund), venture capital, preferred equity and 'special situations' e.g. turnaround, buyout

504 Unaudited value as of 30/09/14

505 [www.localenterprise.ie/smeonlinetool/businessdetails.aspx](http://www.localenterprise.ie/smeonlinetool/businessdetails.aspx)

506 Action Plan for Jobs, 2015, <http://www.djei.ie/enterprise/apj.htm>

There is ongoing review and analysis of the operation of existing initiatives to assess take-up and levels of awareness and ensure their continued relevance to business.

While excessive SME debt has been a legacy of the downturn in recent years, the banks have been engaged in a systematic exercise to offer resolutions to distressed SMEs focused on the borrower's maximum affordability under Central Bank oversight. It is crucial that the levels and types of lending are monitored to ensure SMEs have access to appropriate and competitive sources of finance, led by the SME State Bodies Group<sup>507</sup> and building on existing surveys.

There has been some debate over recent years, post the boom period, regarding capabilities - firstly, within the banking sector, to bring experience and good judgement to bear in assessing risk when applications for funding are less capital intensive and related to innovative sectors of the economy; and secondly, within SMEs, to present a well-structured, clear and credible business plan. Much work has been done to redress this situation, including raising awareness amongst enterprises as to what is available for them, consistent monitoring and review, and developing the skills and financial literacy of banking personnel and SMEs.

## Our ambition

In relation to finance for growth our ambition as *the best place to succeed in business* by 2025 is that we will:

*provide a comprehensive and competitive funding environment to support our enterprises' ambitions, through from pre start-up to maturity, such that no viable business opportunity will falter due to lack of access to appropriate funding.*

The equilibrium of supply and demand in relation to finance is a constantly shifting 'space'. Our immediate focus over the coming years is to continue to address the current challenges, stimulate competition in the market and ensure Irish companies can be funded to an extent that they can compete internationally.

Building on progress made, including for example the establishment of ISIF and SBCI and the ongoing work of the SME State Bodies Group our aim in the medium term is to ensure that there is a wider range of financial instruments on offer and that there is a greater funding mix used by Ireland's enterprise base in terms of debt/equity and bank/non-bank financing options.

We also aim to ensure that business owners know and understand the range of options available, can make strategic use of funding sources appropriate to their particular needs and are well equipped to present compelling and credible business plans. It is important too that funding providers understand the businesses of today, the changing environment and range of markets in which Irish businesses now operate, have the expertise and confidence to take managed risks, and will provide funding and added value products at competitive rates.

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507 Chaired by Department of Finance, this Group's primary function is to facilitate the coordination of policy formulation and implementation across the relevant Government Departments and Agencies, primarily through the implementation of the commitments contained in the 'Access to Finance' chapter of the Action Plan for Jobs, and feed into the work of the Cabinet Committee on Mortgage Arrears & Credit Availability. A further aim is to achieve a consensus position prior to bringing items to the SME Funding Consultation Committee

## Bank funding

Bank funding remains the primary source of funding for many of Ireland's SME sector. There were considerable challenges facing businesses post the boom and 'property bubble' years and during the subsequent recessionary period and in the context of a collapsed banking infrastructure. Much progress has been made over recent years to disentangle the demand and supply side factors and to redress the many issues that impeded a healthy flow of credit.

### Recent investment and lending performance

The latest data from the CSO for 2014 indicates a significant pick-up in investment by the enterprise sector as we emerge from the economic downturn. Investment in plant and machinery by the manufacturing sector reached an all-time high of €4.57 billion, an increase of 47 percent on 2013.

The SME Market Report for the first half of 2015 provides insights of developments in the Irish SME credit market and indicates that applications for new loans and leasing/hire purchasing show continued growth<sup>508</sup>. The majority of applications are for working capital purposes (48 percent), particularly so for micro enterprises. Applications are also high for 'growth and expansion' at 25 percent and for new vehicle/equipment at 29 percent. Rejection rates, having shown reductions in the previous report, have since increased from 14 percent to 16 percent. The current rejection rate of 15.7 percent in Ireland is higher than EU1<sup>509</sup> at 9.1 percent.

ESRI research undertaken in 2014 cautions that it will be important that the property sector does not crowd out lending to the rest of the SME sector and their initial analysis suggests that the credit levels available to the (more capital intensive) manufacturing sector is below desirable levels<sup>510</sup>. The Enterprise Ireland Development Capital Funds and the establishment of the ISIF may go some way to addressing this.

### Challenges remain

Having rolled out a range of initiatives to support SMEs, it is crucial that implementation is sustained and that ongoing monitoring continues to ensure effectiveness<sup>511</sup>. We also need to raise awareness on the part of SMEs of the range of funding sources available - not only of bank financing, but to the wider range of potential sources of funding that are available building on progress already made to date.

While acknowledging that much has been achieved and that debate persists as to the extent to which the SME finance gaps are driven by lack of demand or lack of supply, the issues relating to access to finance (and a return to fiscal stability) remains a central focus for Government<sup>512</sup>. A number of challenges remain including for example:

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508 SME Market Report, 2015 HI, Central Bank of Ireland

509 EU1 comprises Austria, Belgium, Germany, Finland, the Netherlands and France. Ireland's rejection rates are also higher than EU2 which comprises Portugal, Italy, Spain and Greece which is currently 9.5 percent

510 Credit Requirements for Irish Firms in the Economic Recovery, Lawless, M., McNerney, N., McQuinn, K., and O'Toole, C., Special Article in Quarterly Economic Commentary, ESRI, September 2014

511 The standing State Bodies Group, led by Department of Finance continues to monitor progress

512 As evidenced by the Action Plan for Jobs 2012 to 2015, the Spring Economic Statement and the ongoing work of the SME State Bodies Group established in 2012



- the banking system needs to further deepen its understanding of innovative sectors (including both manufacturing and services activities) and of enterprise growth and internationalisation strategies in an increasingly globalised environment;
- the importance of continuing the systematic offering and delivery of debt resolutions to distressed SMEs focused on the borrower's maximum affordability, under Central Bank oversight;
- although there appears to be some progress in relation to (onerous) levels of security/ guarantees required for loans and asset finance, this remains a key concern for enterprises entering a growth phase<sup>513</sup>;
- smaller and younger firms, and those engaging in new products and services are more likely to have a personal guarantee imposed<sup>514</sup>;
- the cost of finance continues to be an issue - new business interest rates for non-financial corporations (NFCs) are higher in Ireland than in the euro area – in 2014 rates were 60 percent higher for loans up to €1 million and 81 percent higher for loans above €1 million<sup>515</sup>. In November 2014, interest rates in Ireland for revolving loans and overdrafts were 42 percent above the euro area average<sup>516</sup>. Given that the business banking market has become highly concentrated, facilitating new entrants to the market is crucial<sup>517</sup>;
- the need to ensure the provision of a range of added value products for companies at all stages of the developmental lifecycle;
- the continuing need to raise awareness in the business community of what is being done, and of the increasing range of options available to them; and
- the continuing need to benchmark the availability of financing, the range of products, and the costs of debt, to evaluate Ireland's competitive position relative to our trading partners.

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513 The Department of Finance commissioned Red C SME Credit Demand Survey, April – September 2014 states that "73 percent of all approved credit applications have criteria and conditions attached to them – the most imposed condition being regular management accounts provided to the bank. However, it is positive to see that personal guarantees as a condition of finance declines again this period to 38 percent, down from 44 percent in March 2014 and 50 percent a year ago."

514 The use of personal guarantees in Irish SME lending, Carroll, James, Fergal McCann, and Conor O'Toole, 2015, Economic Letters 06/EI/15, Central Bank of Ireland and synthesised in the SME Market Report, Central Bank of Ireland 2015 H1

515 Costs of Doing Business in Ireland 2015, National Competitiveness Council/DJEI, 2015 (original data source European Central Bank)

516 Costs of Doing Business in Ireland 2015, National Competitiveness Council/DJEI, 2015

517 The scaling back of the domestic bank sector and the withdrawal of many foreign banks highlights issues regarding levels of competition in the business banking market. As market power increases and the degree of competition falls, SMEs face higher financing constraints, see Does Bank Market Power Affect SME Financing Constraints?, O'Toole, C., Ryan, R., McCann, ESRI Research Bulletin, March 2014. A key goal of the SBCI is to facilitate the entry of new providers of SME funding to the Irish market and it will be important that this goal be realised

## The equity environment

The equity landscape in Ireland has developed substantially over the past 10 to 15 years. Equity finance comprises business angels and private investors, venture capital and private equity<sup>518</sup>. The State has actively supported the development of this segment of the market through a range of investments including the Seed and Venture Funds, the Development Capital Scheme, IFI and ISIF.

Central Bank data can be used to assess the levels of equity across the enterprise base. In the business sector (NFCs) the major source of funding (50.4 percent) is 'shares and other equity' although this does not provide any insights into the proportion of the population of companies that actually use equity. In a recent ECB survey<sup>519</sup> covering the period April – September 2014, Irish SME respondents that indicated they required equity investment decreased from 8 percent to 3 percent over the previous year. A total of 16 percent thought equity relevant to their firms. However, for 78 percent of the SME respondents equity was not considered by them to be relevant to their firms.

In practice, equity investment tends to be taken up by a relatively small cohort of companies<sup>520</sup> - primarily start up, high potential growth companies and more mature companies with expansion or growth plans. Nevertheless, studies by Forfás<sup>521</sup> and InterTradeIreland highlight a lack of awareness and understanding amongst some sectors and more mature businesses of equity and quasi equity options for whom equity would be appropriate<sup>522</sup>. The significance of equity availability for a cohort of strategically important enterprise agency client firms cannot be underestimated, particularly in the context of the ambitions set out in this strategy to systematically grow our Irish owned enterprises to scale.

Although much has happened in the funding environment since the reports were published, the lack of understanding of the benefits in relation to equity options persists. Anecdotal evidence points to a reluctance in the case of some owner/managers, particularly non exporters, to consider equity as an option (even if it appears to be appropriate for growth strategies) because of a lack of trust, or lack of willingness to 'give away' a share of their company. The reality is, however, that this apparent lack of openness to equity investment can (and does) have a negative impact on an enterprise's ability and ambition to accelerate growth to scale.

### Initial public offering (IPO)

A major challenge in Ireland and internationally is to facilitate entrepreneurs and principal investors to realise some of the gains from their investments and to attract further necessary investment for growth, without having to exit the business entirely, should they have the ambition to grow the business further.

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518 A Review of the Equity Investment Landscape in Ireland was published by Forfás in January 2013 and a number of the actions set out have been progressed since then

519 Survey on the access to finance of SMEs in the euro area (SAFE), ECB, 2014, April – September 2014 - Background data, Q4 Financing Structure - Irish respondent sample was 459 SMEs

520 Accepting that all companies need some element of equity investment

521 Now integrated as the Strategic Policy Division into the Department of Jobs, Enterprise and Innovation

522 Access to Finance for Growth for SMEs on the Island of Ireland, InterTradeIreland, December 2013

From an enterprise policy perspective it is important that Irish companies are informed about the options available to list in Ireland and overseas. The establishment by the Irish Stock Exchange, with the support of Enterprise Ireland, of the IPO Readiness Programme is a welcome development. The announcement by the Irish Stock Exchange (ISE) and NASDAQ OMX (NASDAQ:NDAQ) of their intention to bring dual ISE/US market access to Irish companies enabling them to raise capital more easily on both sides of the Atlantic is also welcome, although the size of the companies and potential regulatory burden placed on very small companies also needs to be considered.

### Corporate venturing

Corporate venturing (CV) involves a company purchasing a minority equity stake in another firm and there is evidence of some CV activity in Ireland in more recent years. Investments are usually made in start-up or post start-up stage companies, i.e. companies that can exist independently, that are close to generating revenue and have proprietary intellectual property (IP). Over the period of Enterprise Policy 2025 we need to acknowledge and monitor the interplay between multinationals and the start-up sector so as to support optimum outcomes.

### Enterprise Ireland - stimulating the VC funding environment

Enterprise Ireland has played a key role in terms of stimulating Ireland's environment for VC funding since 1994 and the Forfás evaluation undertaken in 2012 validates the State's role in addressing a clearly defined market failure<sup>523</sup>. In advance of developing the third VC fund for the period 2007-2012, a review was undertaken by PWC. At that time it was concluded that although significant progress had been made, the VC market in Ireland was still relatively young and underdeveloped vis a vis international benchmarks and had not reached a point where it could be considered sustainable in its own right. This situation was deemed to still exist in 2012 by a sub-committee of the SME State Bodies Group.

On this basis the Government announced the establishment of the €175 million Seed and Venture Capital Scheme 2013-2018 to enable Enterprise Ireland to continue to invest, on a *pari passu* basis with the private sector, to ensure the availability of venture capital for Irish start-up and scaling companies. This continued investment in the VC sector is in line with the experience of our international trading partners.

### Stimulating equity investment - incentives

A Department of Finance review (2011) of the Business Expansion Scheme (now the Employment and Investment Incentive or EII) found that 'since its inception, the BES has proved successful in helping SMEs gain access to capital investments, with a view to supporting job retention and creation in the State'. Recent adjustments have been made to the EII in that the amount of finance that can be raised by an enterprise has been increased to €5 million annually, the required holding period for the shares has increased from three to four years, and the qualifying sectors have been expanded.

The Seed Capital Scheme has been rebranded as the Startup Refunds for Entrepreneurs Scheme and a simple and easily accessible guide has been launched (May 2015) to address concerns

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<sup>523</sup> The overall aim of the agency's involvement was to address a market failure in the Irish ecosystem focused on entrepreneurs and businesses in high technology and/or knowledge intensive sectors. Note that the evaluation did not assess the performance of the funds themselves (Funds 2 and 3), see Evaluation of Enterprise Supports for Start-ups and Entrepreneurship, Forfás, March 2012

relating to the relatively low levels of take up. Provisional figures<sup>524</sup> for 2013 suggest that just sixty-five companies benefited from the relief at a cost of €1.3 million. We need to continue to raise awareness of these schemes and the enterprise development agencies, relevant offices and bodies<sup>525</sup> can play a role in this regard. The take up of these initiatives will continue to be monitored, with any remaining barriers and/or disincentives addressed. It is important to evaluate on an ongoing basis whether these schemes remain internationally competitive. Work will continue across Government to ensure the appropriate incentives are utilised to encourage investment.

A vibrant equity funding environment is particularly important to deliver on our ambition for a dynamic entrepreneurial community and to grow more Irish owned companies to scale. There is a continuing need to stimulate and encourage potential investors to invest and support the development of equity networks and markets.

## Alternative sources and new forms of financing

Changes in the economic and business environment resulting from technological development, social media changes and changes instigated by responses to the crisis have led to the growth and development of innovative and progressive alternatives in the non-banking space. There is a range of non-banking funding instruments available to enterprises, some of which have been in existence for some time, including:

- invoice discounting or supply chain financing;
- off balance sheet financing sources, such as lease financing, hire purchasing or factoring;
- loans from family, friends or others; and
- crowd funding or peer lending.

Examination of the best means of supporting these innovative, decentralised and disruptive approaches will need to be undertaken quickly so as not to stymie their development in the Irish market and their potential to support Irish businesses in terms of access to finance and/or new product development.

## Profitability, working capital and cash flow

The ultimate objective of growing successful Irish businesses on international markets is that they can be profitable and have the resources to continue to invest, expand, innovate and create sustainable jobs over the longer term. It is important that businesses have the retained earnings available to grow and scale their businesses from their own resources as well as from external debt and equity finance. The initiatives set out in other parts of this document are focused on building this improved performance.

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524 PQ 16419/14

525 Including Enterprise Ireland, LEOs and Skillnets - e.g. through Start Your Own Business courses, financial literacy and management development programmes and in the provision of advisory services to client companies

Companies may also utilise working capital (accounts receivable/payable) as a short term funding alternative. This form of short term 'funding' is not always appropriate. It can entail businesses relying excessively on their suppliers to help finance their business (and can have a resultant negative impact on suppliers' own ability to fund their operations with any degree of certainty), impacting on their ability to expand and create employment. Ensuring the availability of working capital for exporters so Irish companies can compete on an internationally competitive basis will remain a priority over the period of Enterprise 2025.

Some progress has been made in terms of changing the culture with regards to prompt payments - aimed at facilitating effective management of cash flow by businesses including, for example, the introduction of the Prompt Payments legislation 2011 and the recently launched Prompt Payments Code that sets standards for best practice in payment and is administered by the Irish Institute of Credit Management (IICM) on behalf of DJEI.

## EU funds and engagement with international funding institutions

Since 2012 there has been an emphasis on increasing our engagement across Government with both the European Investment Bank (EIB) and the European Investment Fund (EIF) including in developing and implementing mechanisms designed to maximise the provision of financing to SMEs. Recent changes in the Irish infrastructure, including the establishment of the SBCI, afford the potential for a deeper and more intensive collaboration. Enterprise Ireland has also co-invested with the EIF on a number of occasions and are currently finalising the establishment of the EIF European Angels Fund in Ireland.

There is an opportunity to maximise our engagement so as to ensure that there are no untapped or underutilised sources of international funding for SMEs. In this context the emphasis will be on targeting those financial instruments which are potentially of most benefit to companies in Ireland, including the:

- European Commission's Investment Plan for Europe (EFSI) known as the 'Juncker Plan' is an ambitious infrastructure investment programme aimed at unlocking public and private investments of at least €315 billion over a three year fiscal period (January 2015 to December 2017);
- Horizon 2020 (the Framework Programme) involves a fund of €80 billion supporting collaborative research. Enterprise Ireland (through its Framework Programme Network) can help researchers and enterprises to collaborate with research teams in Europe and win funding for Irish research projects<sup>526</sup>; and the
- Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME) programme which will run from 2014 to 2020 with a budget of €2.3 billion aimed at supporting entrepreneurs and SMEs.

We will continue to develop actions to optimise these instruments to grow and develop the Irish economy.

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<sup>526</sup> We will maintain a policy focus on commercialisation to ensure the effective transfer of Horizon 2020 Intellectual Property into commercial ventures

The establishment of the Capital Markets Union (CMU) is a key element of the Juncker Plan. The CMU aims to create deeper and more integrated capital markets in the 28 Member States of the EU to redress the imbalance of the traditional dominance of EU banks in financing the economy. The European Commission cites the fact that European SMEs receive five times less funding from capital markets<sup>527</sup>. CMU, through a wide ranging series of initiatives, aims to make EU capital markets more integrated, liquid and competitive. Its ultimate purpose is to increase resilience of the financial system and provide greater opportunities for SMEs and longer term infrastructure projects.

The CMU is set to be a high profile initiative scheduled to run from 2015 to 2019. An Action Plan by the European Commission was launched in September 2015 that set out specific actions that will be taken over the next four years<sup>528</sup>. While there will undoubtedly be benefits to the broad European economy, Ireland's particular focus will be on what the CMU can do for SMEs and for smaller markets. In this context, the Commission will take forward action in a number of priority areas including 'providing more funding choices for Europe's businesses and SMEs' to:

- modernise the Prospectus Directive to make it less costly for businesses to raise funds publicly, review regulatory barriers to small firms listing on equity and debt markets and support the listing activities of small firms through European advisory structures;
- launch a package of measures to support venture capital and equity financing in the EU, including catalysing private investment using EU resources through pan-European funds-of-funds, regulatory reform and the promotion of best practice on tax incentives;
- promote innovative forms of business financing such as crowd-funding, private placement, and loan-originating funds whilst safeguarding investor protection and financial stability; and
- explore ways to build a pan-European approach to better connect SMEs with a range of funding sources.

The immediate actions include a consultation on venture capital and legislative proposals to establish a framework for simple, transparent and standardised securitisation<sup>529</sup>.

In conclusion, we have set out a number of actions aimed at establishing a robust funding environment for enterprise over the coming decade. Delivering on these actions will require the commitment of a range of stakeholders including government departments, the enterprise development agencies and other bodies.

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527 Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions, Action Plan on Building a Capital Markets Union, September 2015 [http://ec.europa.eu/finance/capital-markets-union/docs/building-cmu-action-plan\\_en.pdf](http://ec.europa.eu/finance/capital-markets-union/docs/building-cmu-action-plan_en.pdf)

528 *ibid*

529 Immediate actions (September 2015) also include an adjustment to Solvency II legislation to make it easier for insurers to invest in infrastructure and European Long Term Investment Funds (ELTIFs) and consultations on covered bonds, and a call for evidence on the cumulative impact of financial legislation

	<b>Establishing a robust funding environment for enterprise</b>	
	Drive competition in the lending market and the provision of the widest range of services to meet the needs of internationally trading and innovative enterprises.	DoF
	<p>Work with financial institutions (both nationally and internationally) to facilitate the creation of a comprehensive and competitive funding environment to support our enterprises' ambitions through from pre-start up to maturity including to:</p> <ul style="list-style-type: none"> <li>▪ Stimulate greater equity and quasi-equity investment;</li> <li>▪ Encourage the use of capital markets in the funding eco-system for indigenous companies, in areas such as early stage listings;</li> <li>▪ Strengthen the capabilities of Irish owned enterprises in terms of strategic use of funding options for growth; and</li> <li>▪ Promote new alternative sources of funding such as peer-to-peer lending and ensure our regulatory regime is fit for purpose and adaptive to new and alternative forms of funding/financing.</li> </ul>	DoF, DJEI, DPER, EI
	Engage with European and International financial institutions and funding streams - ensuring that we optimise the potential to enhance Ireland's funding environment over the coming years.	DoF, DPER, DJEI, EI

## Taxation policies

### Introduction

The framework of taxation is part of the enterprise ecosystem and an important competitiveness factor for Irish based companies trading internationally and competing for talent. There is a positive relationship between a pro-enterprise tax environment and a stable macroeconomic environment. Certainty, stability and predictability in taxation policy facilitate enterprise decision-making, minimises business costs and supports enterprise growth.

### A growth-friendly tax regime

Ireland has continued to evolve a taxation system that is clear, transparent and predictable. Over recent years amid the continuing effort to restore sustainability to the public finances, government policy has placed a key emphasis on building a growth friendly regime. Overall, the Government is committed to broadening the tax base in a manner consistent with the OECD hierarchy of taxes, which sees corporate taxes as most harmful to growth, followed by personal income taxes, and then consumption taxes, with recurrent taxes on immovable property as the least harmful.

Over the decade to 2025 we can anticipate that competition for internationally mobile investment will continue to intensify. All of the signals are pointing towards a scenario where corporate tax will remain critically important but less of a differentiator for Ireland in an international context<sup>530</sup>. Our competitive offering in relation to corporate tax will continue to be based around a combination of rate, regime and reputation, complementing the key non-tax related differentiators of talent, innovativeness, connectedness and quality of place.

The underlying principles that will guide enterprise taxation policy to 2025 include:

- maintaining a competitive environment in Ireland for internationally mobile investment;
- stimulating enterprise development and growth; and
- ensuring that Ireland remains an attractive place for the talent our enterprises need.

#### Maintaining a competitive environment for internationally mobile investment

Ireland's low corporation tax rate has been an important and longstanding element of enterprise policy and of wider economic policy in Ireland. It has played an extremely important role in our competitiveness for foreign direct investment and also in supporting enterprise development generally. As set out in the roadmap for Ireland's tax competitiveness alongside Budget 2015, Ireland will continue to structure its corporation tax system on the basis of:

- **Rate:** Ireland remains totally committed to the 12.5 percent corporation tax rate;
- **Regime:** A system that is open, transparent, predictable and built upon substance; and
- **Reputation:** A system that plays by the rules.

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<sup>530</sup> For example, as competitors competing directly on rates and incentives, modifications to international taxation rules, and the possibility of greater coordination on taxation matters at EU level



In an evolving international tax rules environment, Ireland is in a strong position to continue to win and retain activities of substance and high value.

Ireland will continue to develop its competitive taxation offering in support of the expansion of domestic enterprise and the attraction of FDI aimed at attracting, retaining and embedding operations of scale and value add. This will include measures to drive forward a range of enterprise policy objectives, including increasing levels of investment in R&D activities, and strengthening our offering around intellectual property.

Ireland's accelerated capital allowance scheme for intangible assets has been enhanced to make Ireland an attractive location for companies to locate and develop intellectual property and locate associated high value jobs here. The Government has also announced that it will introduce the first OECD compliant Knowledge Development Box (KDB) in 2016. The KDB will provide an effective and competitive tax rate<sup>531</sup> for Intellectual Property income that derives from IP assets developed from substantial activity.

### Stimulating enterprise development and growth - investment in productive activities

It is entrepreneurs who take risks, start and grow businesses and create jobs. Acknowledging that there is a strong interplay between the tax and the funding environments, the tax environment can influence an individual's decision in whether or not to establish a business in the first instance and in what jurisdiction to locate a business. Today, entrepreneurs are increasingly mobile and we need to ensure that Ireland continues to provide a competitive environment so that entrepreneurs will choose to establish and grow from here (accepting that considerations relating to end markets, proximity to customers etc., also play a role in business location decisions).

Ireland offers numerous taxation incentives aimed at stimulating productive investment activity, particularly at start-up level<sup>532</sup>:

- The Start-Up Company relief provides corporation tax relief from corporation tax on trading income (and certain capital gains) of new start-up companies in the first three years of trading, in order to encourage economic activity and employment in Ireland.
- The Startup Refunds for Entrepreneurs Scheme (SURE) provides a refund of income tax paid to those who establish and work full-time in their own company, supporting the creation of jobs, and encouraging those thinking about becoming an entrepreneur to take the next step.
- The Employment and Investment Incentive (EII) seeks to broaden the financing mix of SMEs away from a high reliance on debt financing towards a greater use of equity funding, by providing an income tax incentive to private or equity investors of companies.
- The Foreign Earnings Deduction meanwhile supports Irish enterprise expansion and access to new export markets, by providing for a capped income tax deduction for

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<sup>531</sup> Budget 2016 introduced a rate of 6.25 percent, which equates to 50 percent of the standard trading corporation tax rate

<sup>532</sup> Budget 2014 introduced a 10 point tax reform plan to help small businesses in particular

individuals who temporarily carry out office or employment duties in specified countries<sup>533</sup>.

There are some elements of Ireland's entrepreneurial tax offering that can be improved upon, particularly in the context of our nearest trading partners. The Department of Finance engaged in a consultation process in early June on how best to support entrepreneurship through the taxation system. Budget 2016 has started to address the differential taxation of self-employed income (including the salaries of owners-directors)<sup>534</sup> and enhancements have been made in relation to capital gains tax.

### Ensuring that Ireland remains an attractive place for talented individuals

A competitive personal tax regime is an important factor in attracting and retaining talent. The difference between the employers' cost of hiring an individual and the individual's actual take home pay (the tax wedge) is important in the context of foreign nationals looking at opportunities in Ireland and also Irish nationals considering the possibility of returning home. It is also relevant for Irish based businesses having the ability to attract key skillsets on a competitive cost basis, to assist them in their growth<sup>535</sup>. Ireland's income tax system is highly progressive by international standards. Nevertheless there are also disincentive effects including marginal tax rates of in excess of 50 percent for higher income workers when USC and PRSI are taken into account. Budget 2016 made significant changes to the Universal Social Charge (USC) as a result of which the marginal rate of tax for middle-income earners has dropped below 50 percent.

The Department of Finance has taken steps to enhance the attractiveness of Ireland to global talent through the Special Assignee Relief Programme (SARP), to attract specialised, experienced senior executives. The key employee provision of the R&D tax credit is designed to assist companies, particularly SMEs, to attract and retain key talent.

Share ownership has the potential to support the attraction and retention of talent, and to reduce fixed labour costs and capital requirements for high potential start-ups and scaling companies which are cash flow poor but have significant potential for capital appreciation. There is some scope to enhance the attractiveness of share-based remuneration in the Irish context.

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533 At present these include the BRIC countries, and countries in Africa, the Middle East, Asia and Latin and South America

534 Budget 2016 starts the process of delivering parity of treatment through the introduction of a new income tax credit for the self-employed

535 Ireland ranked 10th overall in INSEAD's Global Talent Competitiveness Index 2014, but 55th in terms of the extent and effect of taxation on attracting talent

	<p><b>We will continue to maintain our commitment to transparency and stability and on enhancing the environment for business investment, innovation and entrepreneurship</b></p>	
	<p>We will continue to implement the changes set out in the tax roadmap for Ireland's tax competitiveness , and will:</p> <ul style="list-style-type: none"> <li>▪ maintain the competitiveness of our Corporation Tax Rate;</li> <li>▪ continue to expand Ireland's tax treaty network; and</li> <li>▪ implement a Knowledge Development Box in 2016, within the guidelines agreed at various international fora.</li> </ul>	<p>DoF</p>
	<p>We will continue to enhance the relative competitiveness of the taxation system (and especially relative to our nearest trading partners), and will:</p> <ul style="list-style-type: none"> <li>▪ support entrepreneurship, start-ups and the competitiveness of Irish SMEs that includes a range of aspects such as investment incentives, CGT etc.;</li> <li>▪ address disincentive effects within the tax and social welfare systems affecting the self-employed, taking into account, and with regard to, the differing treatments between self-employed tax payers and PAYE workers within a stated timeframe; and</li> <li>▪ ensure that existing initiatives are subject to periodic review to enhance effectiveness and optimal levels of take-up.</li> </ul>	<p>DoF</p>

## Cost competitiveness

### Introduction

Cost efficiency is a strategic imperative for all firms in order to maximise potential returns in a competitive environment. Relative cost performance plays an important role in determining an enterprise's ability to compete in international markets, and to attract mobile capital investment. A competitive market environment also allows new firms to challenge incumbents, efficient firms to grow, and inefficient ones to exit, helping boost economic growth and living standards. Ireland's cost base improved substantially across a range of metrics in the wake of the recession, making Irish firms more competitive internationally and making Ireland a more attractive location for firms to base their operations. Despite low levels of inflation in recent years, however, Ireland remains a high cost location. Furthermore, many of the reductions in costs were a cyclical response to the recession, which can be eroded as economic growth returns. In light of this, the economy is at a turning point in terms of cost competitiveness, with latest data showing that overall relative cost competitiveness has begun to deteriorate and that a series of upward cost pressures are emerging<sup>536</sup>. Harmonised competitiveness indicators show that Ireland's relative cost competitiveness is now declining vis-à-vis Ireland's main competitors. Particular focus is required to address domestically influenced cost factors in the labour market and in the energy sector.

### Pay and earnings

Pay costs constitute one of the most significant input costs for most firms, particularly service firms, which are playing an increasingly large role in the Irish economy. Following the rapid wage growth unsupported by productivity in the pre-2008 period, in which wage developments ran up to 50 percent higher than the euro area average, the growth in labour costs slowed appreciably in the wake of the recession. Some competitiveness in pay costs was restored during the recession, partly due to improved productivity, but largely driven by a fall-off in demand and reduced capacity constraints, allied to compositional changes in employment (i.e. the collapse in construction).

Recent Irish labour cost growth has been modest but positive, and less than the euro area average, after several years of marginal decline (2010/2011). In 2013, in terms of gross wages (wages, taxes on income, and employer and employee social security contributions), Ireland had the 8th highest gross and net wage level in the euro area<sup>537</sup>. While Ireland has been improving its competitiveness in relative terms compared to the euro area in recent years, it is concerning that even in the face of modest wage growth, productivity is not keeping pace with this wage growth. This is reflected in the rise in recent years of Irish unit labour costs, which measure the average cost of labour per unit of output (i.e. productivity)<sup>538</sup>. It is critical from a competitiveness

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536 See Costs of Doing Business in Ireland 2015 (April 2015), DJEI/National Competitiveness Council, and summary in Appendix XI

537 Ireland's Competitiveness Scorecard 2014, p.53, Forfás/National Competitiveness Council

538 Unit labour costs (ULC) measure the average cost of labour per unit of output, and are calculated as the ratio of total labour costs to real output. ULCs should not be interpreted as a comprehensive measure of competitiveness, but as a reflection of cost competitiveness. Unit labour cost measures deal

perspective that into the medium and long term, especially as the Irish labour market tightens, that increases in labour costs are linked with productivity improvements.

The Government itself has little direct control over private wage rates, but does exert some influence in the labour market, for example through the rate at which the National Minimum Wage is set (now to be advised on by the recently established Low Pay Commission), the level of public sector pay, and the level of taxation on labour, and how taxes generally are applied- which influences pay costs and the level of inflation. The Government also facilitates orderly and responsible wage developments through the State's industrial relations machinery, and its regulation of sectoral wage setting mechanisms. The Government has recently created the Workplace Relations Commission, a major reform of Ireland's industrial relations institutions, and this is to be complemented by the passage of recently published reforming legislation in respect of Registered Employment Agreements and Employment Regulation Orders, Collective Bargaining, and establishment of the Low Pay Commission.

All will play key roles in ensuring an environment in which there is greater certainty and stability in pay costs and industrial relations for enterprise, with agreements on terms and conditions based on clear, balanced and evidence based mechanisms to deal with specific industrial relations issues. These will be based on comparators, and take into account the sustainability of the employers' business in the long term.

	<b>We will drive productivity growth as a national imperative and support enterprises to get to international benchmarks relevant to their sectors</b>	
	The National Competitiveness Council will place a high priority on the measures required to drive productivity growth in the economy over the next five years, as we seek to grow jobs, improve standards of living, and international competitiveness.	DJEI/NCC
	Sustain the focus on productivity performance in deliberations on wage increases and emphasise the need, from a sustainability and competitiveness perspective, for wage growth to be underpinned by productivity.	DJEI, DPER
	<i>Many of the other recommendations set out in this strategy are directly relevant to driving productivity growth including those relating to education and skills, science, technology and innovation, infrastructure investments, interventions at the level of the firm focused on capability building etc.</i>	

### Competition and consumer protection

Competition is a key driver of efficiency, innovation and long term growth in business, while consumer protection builds consumer confidence and empowerment and is a pivotal ingredient to increased business activity.

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exclusively with the cost of labour, which though important, should be considered in relation to changes in the cost of capital

Limited competition in many locally traded sectors of the Irish economy (e.g. legal and other professional services, in which regulatory restrictions persist) has contributed to prices and costs being out of line with many of Ireland's competitors<sup>539</sup>. At present, there are upward cost trends particularly in business services, after several years of price reductions over the course of the recession. In terms of the overall professional service regulation, Ireland is ranked 11th out of 29 OECD countries; in relation to the legal profession Ireland is ranked 23rd<sup>540</sup>. Poor relative performance with regard to the restrictiveness of the legal profession reflects a range of scores across indicators measuring 'inter-professional cooperation', 'compulsory chamber membership' and 'regulations of the form of business'<sup>541</sup>.

A recent trend has seen prices for internationally traded goods as generally flat, while the price of domestically traded goods and services has been increasing. In Q3 2014, prices for a basket of business services were 6.5 percent above 2010 levels. In spite of the reductions in legal costs in recent years, Ireland remains an expensive location to enforce a business contract, with lengthy timeframes a key factor. The Legal Services Bill, once enacted should help to deliver more efficient, transparent and competitive legal services in Ireland, and thereby reduce costs for the enterprise sector.

Government has a major role to play in enhancing competition and consumer rights through its power to implement and reform regulation in both the public and private sectors. Its chief instrument in these fields is the Competition and Consumer Protection Commission (CCPC), established in 2014 following a merger between the Competition Authority and the National Consumer Agency, which is responsible for the enforcement of competition and consumer protection law. It aims, through investigation, enforcement and policy advocacy, 'to make markets work better for consumers and businesses'<sup>542</sup>. A transparent, effective enforcement regime provides certainty that is conducive to enterprise.

The CCPC has been granted greater powers with which to deal with both competition and consumer issues that affect both business and consumers and to promote and enforce compliance with the new Grocery Goods Regulations governing aspects of commercial relationships in the grocery sector.

Besides proactively acquiring market intelligence, the Commission has a critical role to play in identifying and addressing anti-competitive behaviour (including oversight of mergers and acquisitions).

In terms of the future competition policy agenda, from an enterprise perspective, it is important that progress is achieved on competition issues where they affect business input costs, including the regulated sectors, such as energy, waste and the construction sectors. Implementation of this agenda lies not only with the CCPC but also with the relevant sectoral regulators<sup>543</sup>. The Commission is in the process of undertaking analysis of 'competitive neutrality', which covers the concept that there should be a level playing field for all entities (whether State owned or

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539 Ireland's Competitiveness Scorecard 2014, National Competitiveness Council, 2014

540 Ibid

541 Ibid

542 Strategy Statement of the CCPC, 2015-2018, Competition and Consumer Protection Commission, p.2

543 See Regulating for a Better Future: Government Statement on Economic Regulation, 2013

private) involved in the same economic activities (e.g. the provision of after school supervision services). Opportunities still exist for reform in the sheltered sectors (legal and healthcare).

	<b>Strengthening competition</b>	
	<p>Drive and promote competition across all market sectors of the economy to inter alia address barriers to entry and create a level playing field for all entities.</p> <p>In this context, set benchmarks to be achieved on a continuous basis in areas for particular action.</p>	<p>DJEI/CCPC, Relevant Govt Depts/ Sectoral Regulators</p>

### The cost of regulatory compliance

Regulation plays an essential role in ensuring that economic activity by individual economic actors is consistent with wider national policy objectives. It is important, from an enterprise and competitiveness perspective, that the regulatory environment is responsive, and generates security and stability for business without imposing unnecessary regulatory costs, facilitating a firm platform for innovation, keen competition and growth. Ireland is shown by international benchmarking statistics to impose a relatively low burden of regulation on business, and that the regulatory environment is relatively more progressive and supportive for enterprise.

The regulatory environment can confer a considerable cost burden on business, both in terms of 'substantive' compliance costs, and 'administrative' compliance costs. While a stable legal environment in which business regulation plays a major role is important both for Irish owned firms and the attraction of FDI, the continuing challenge is to ensure that regulation is proportionate and well implemented. The Government's objective is to maintain a regulatory system that is internationally recognised for its efficiency and effectiveness, within a framework of mandatory European Union regulation, and improve the interface between government and business generally.

There has been a cross-Government programme to reduce the administrative burden on business by 25 percent. The High Level Group on Business Regulation, currently chaired by Minister of State for Business and Employment, works to identify the administrative burdens placed on businesses arising from regulation and to determine ways to reduce and simplify these burdens or eliminate them where they are unnecessary. In addition, the EU's Smart Regulation agenda emphasises regulatory fitness and seeks to minimise the regulatory burden on SMEs. The new EU Accounting Directive 2013/34/EU, for example, aims to reduce the administrative burden for small companies by adopting a 'think small first' approach. It introduces a simplified set of financial reporting requirements on small companies. The imminent introduction of a new Integrated Licensing Application Portal is aimed at streamlining the application process for licenses particularly where businesses need to acquire multiple licenses.

Challenges persist in some areas however. The administrative cost burden of regulation continues to be raised by small businesses, particularly in the area of employment law. While Regulatory Impact Analysis (RIA) is employed to ensure new regulations are evidence based and designed in a manner that does not impose unnecessary costs on society and the economy, more can be done to ensure that a 'think small first' principle is applied through the RIA mechanism.

Continuous improvement and modernising of the regulatory environment also provides an opportunity to develop Ireland's competitive advantage for sustainable enterprise growth. The Department of Jobs, Enterprise and Innovation develops and implements policy for appropriate, smart and proportionate business regulation by specialist bodies such as the Companies Registration Office (CRO), the Office of the Director for Corporate Enforcement (ODCE), and the Irish Auditing and Accountancy Supervisory Authority (IAASA).

**Raising regulatory awareness:**

The Government has launched various initiatives tasked with raising regulatory awareness amongst business. These include launch of the [www.businessregulation.ie](http://www.businessregulation.ie) web portal, which brings together many strands of regulatory and compliance information applicable to business, particularly making it easier for SMEs and start-ups to identify the regulations that apply to them. 'Taking Care of Business' events are also held, where small business and entrepreneurs have the opportunity to engage with upwards of 25 regulatory bodies, with the informal two way communication a means of reducing the perceived burden of regulation, through the provision of advice and support, and giving small and start-up businesses a prioritised set of actions to take to achieve regulatory compliance most efficiently and effectively.

More generally, major recent developments in Irish business regulation include the Companies Act 2014, which is to be fully implemented over the next few years. The Act aims to simplify and modernise Irish company law, to create a modern state of the art legislative code for companies and its enforcement by the company law regulatory bodies, to make Ireland a more attractive, efficient and secure place in which to do business. During the transition period under the Act, the CRO and DJEI will work to make the implementation process as business friendly as possible, through provision of useful and targeted information.

Major advances have also been made in facilitating e-compliance, e-filing and e-learning for business, helping produce significant time and cost savings for businesses and entrepreneurs<sup>544</sup>. This encompasses the registration of business taxes, and a one-stop integrated licensing portal, amalgamating applications for business across Government departments, agencies and licensing authorities.

	<b>Business regulation</b>	
	Drive the system-wide initiative to reduce the regulatory administrative burden for businesses under the guidance of the High Level Group on Business Regulation.	DJEI and other Govt Departments
	Raise awareness and better inform business of the regulatory and compliance information applicable to them informed by a review of the functionality of the web portal <a href="http://www.businessregulation.ie">www.businessregulation.ie</a> .	DJEI and other Govt Departments

**Other non-pay costs**

Non-pay costs in Ireland have been the subject of extensive analysis to date, notably by the National Competitiveness Council, which over recent years has shown that Ireland needs to improve its performance relative to other countries across a range of business inputs including:

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544 The Health and Safety Authority's 'BeSmart' initiative is a case in point



energy, waste, rents and property. Within these costs, there are elements that are controllable (i.e. those costs open to domestic policy action) and non-controllable (costs that are externally determined). The controllable cost elements can be addressed either through direct Government measures, or the establishment by Government of a regulatory or investment climate in which the private sector can help reduce the cost base. In the case of costs that are within the direct control of businesses themselves, Government can also act to encourage the most efficient and cost-effective approach to businesses management.

### Energy

Energy costs can comprise a large component of direct non-wage costs for some firms. Changes in relative energy prices have potentially far-reaching effects on investment, production and trade patterns in internationally trading sectors, particularly large business consumers in Ireland, such as the food sector, and other manufacturing sectors such as engineering, ICT, medical devices and pharmaceuticals (many are important regional employers, operating in low margin markets where prices are determined globally).

While aspects of the Irish energy market have improved in recent years, there was a sharp deterioration in Ireland's cost competitiveness between 2010 and 2014. This has left Ireland an expensive location for energy compared to most of its EU peers, with EU energy prices in turn generally higher than prices in the US, Ireland is the 6th most expensive location in the euro area for both SMEs and large electricity users, while lying in mid-table in the euro area in terms of industrial gas prices.

Given Ireland's heavy dependence on imported energy, the difficulty is that Ireland's energy prices are largely determined globally. The Government is fully supportive of the EU's comprehensive review of its energy competitiveness<sup>545</sup>. In addition, Irish policy has focused on reducing costs through maximising energy efficiency. This has included the launching of an Energy Efficiency Fund and National Energy Services framework, to enhance Ireland's energy performance by inspiring adoption of energy efficiency and management techniques, and accelerating the market for energy retrofits. A National Energy Efficiency Plan has also been launched, with the objective of achieving 20 percent efficiency savings to 2020 across the public and private sectors. A comprehensive suite of supports for commercial and public sector bodies have also been introduced, such as the Large Industry Users Network, EI's lean business programme, the enterprise agencies' environmental aid programme, while the Sustainable Energy Authority of Ireland (SEAI) also has programmes for SMEs<sup>546</sup>. A new Energy policy white paper is being formulated by the Department of Communications, Energy and Natural Resources to reassess Ireland's energy priorities and ensure the right policy choices are made to support long term economic growth and international competitiveness. This will include addressing the controllable elements of energy costs in Ireland, promoting energy efficiency, reducing costs and improving security of supply.

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545 EU industrial electricity prices are more than twice those in the US (a key competitor and source of FDI) and 20 per cent higher than in China, while EU industry pays three to four times more for gas than competitors in the US, Russia and India.

546 It has been estimated (2013 APJ, p.42) that most businesses who have not yet addressed the issue of energy efficiency can reduce their costs by 20 percent for minimal outlay.

### Waste costs

The availability of waste management services and their associated costs are important competitiveness issues for Irish enterprise, particularly for internationally trading sectors such as food, pharma, and ICT, and domestic sectors such as hospitality and retail. Ireland remains highly dependent on landfill facilities, although there has been a significant move away from landfill towards a more environmentally sustainable approach to waste management, as required under the EU's Waste Framework Directive. Irish landfill costs are among the most expensive compared with a relevant peer group average used by the National Competitiveness Council (e.g. the OECD and euro area average), increasing from €93 per tonne in 2010 to €113 in 2014. This increase is largely attributable to increases in the landfill levy, one of a range of regulatory and market based instruments to help Ireland meet its EU landfill targets<sup>547</sup>. Thermal treatment costs (gate fees), although lower than landfill costs, are also expensive in comparative terms.

The landfill levy aside, Irish waste management costs are driven by a number of factors, including the EU's polluter pays principle; Ireland's small and dispersed population; and competitive costs in other EU countries, resulting from their excess low cost waste infrastructure. Combined with the increase in Ireland's landfill levy, these lower costs in other EU countries encourage the export of an increasing amount of residual Irish waste. These lower waste costs are unlikely to continue in the long term, however, which could leave Irish businesses vulnerable to price increases. Other more controllable factors include the regulatory and policy uncertainty preceding publication of a new national waste policy in 2012, which resulted in higher costs for consumers and higher risks for infrastructural investment. There was also a fragmented regional approach to waste planning and implementation up to 2014, resulting in small scale facilities, while the cost structures of waste collection and infrastructure companies have also influenced costs. The reduction of regional waste management plans under the new waste policy from 10 to three has the potential to alleviate this. There have also been lengthy delays in the planning process, on the timely delivery of cost competitive waste management infrastructure.

### Water/waste water

Water/waste water costs for enterprise compare well to competitor markets, although they vary considerably by local authority area<sup>548</sup>. Development of a new business pricing framework in Irish Water has led to a degree of uncertainty on future costs. There is a need for investment in water infrastructure, which, allied to the cost of meeting environmental targets, could result in increases in prices – although these may be offset to a degree through the efficiency gains arising as a result over the longer term<sup>549</sup>.

### Property

Growth in the property market since 2014 has, in common with the residential sector, seen significant rises in commercial sector capital values and rents, following several years of significant cost reductions. This is partly a result of shortage of supply arising from the collapse of the construction sector after 2008, and the return of economic growth. Capital values have

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547 The others include source separated collection of bio-waste, pre-treatment and restriction of particular waste streams to landfill, and producer responsibility initiatives for waste streams (e.g. packaging, waste electrical and electronic equipment).

548 Costs of Doing Business in Ireland 2015, National Competitiveness Council/ DJEI, 2015

549 Ibid

increased strongly in all commercial sectors e.g. office, industrial, retail, and were up 31.4 percent in the year to early 2015. Rising property costs are viewed as posing a significant threat to competitiveness, with a direct link between house prices and upward wage expectations. This has been accompanied by a growing shortage of Grade A office space in prime city centre locations, partly a result of Ireland's success in attracting foreign direct investment. These constraints have the potential to result in future rent increases, and impact adversely on Ireland's competitiveness and attraction of FDI. This also affects tourism, with hotel accommodation failing to keep pace with the increase in demand.

Government policy has sought to ease supply constraints and rising property costs through policy changes to assist the property and construction sectors, such as tax incentives, and publication in 2014 of Construction 2020 - A Strategy for a Renewed Construction Sector<sup>550</sup>. The strategy is aimed at ensuring a strong and sustainable construction sector, capable of building the houses and infrastructure needed, through housing targets, changes to the planning process, availability of finance, monitoring and regulating of the industry, and ensuring high skills and opportunities for its workforce. The strategy envisages development of a National Planning Framework (to succeed the National Spatial Strategy), publication of a general scheme of a Planning Bill, and a proposed Policy Statement on Planning. It notes the importance of a good supply of commercial premises as a key requirement for economic progress. A public consultation is also to be launched to determine whether landowners are holding onto zoned or serviced development land for higher prices, with the potential for taxation measures depending on its outcome.

The Government has urged local authorities to exercise restraint in the setting of commercial rates, and has been seeking revaluation of commercial premises to provide the basis for an adjustment of commercial rates. The existing system of rates is seen as doing little to encourage the efficient use and development of vacant commercial land, weakening the incentive for existing businesses to expand and discouraging entrepreneurship.

### **Business services and other input costs**

Overall, Ireland's current price profile can be described as 'high cost, rising slowly'. Irish price levels are 16.8 percent above the euro area average. In 2013, Ireland was the 3rd most expensive location in the euro area for consumer goods and services, while costs relative to national income remain high when compared to the euro area average. When a range of goods and services categories are considered, Irish price levels are above the euro area average in 10 of 12 of the categories<sup>551</sup>.

In terms of the broader cost environment, while Irish consumer prices adjusted downward in the years following the recession, in 2014 Ireland remained an expensive place to live. During the course of the recession, Ireland's inflation rate (in some years Irish prices actually experienced

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550 Construction 2020: A Strategy for a Renewed Construction Sector, Department of the Taoiseach, 2014

551 Those categories running above the euro area average are alcohol and tobacco, driven significantly by tax policies; health; restaurants and hotels; communication; miscellaneous goods and services; actual individual consumption; housing and utilities; education; food and non-alcoholic beverages; recreation and culture; and transport. Only housing and maintenance, and clothing and footwear, are at or below the EU average.

deflation) was consistently amongst the lowest in Europe, resulting in a narrowing price differential.

Since early 2014 in the case of the dollar, and mid-2013 for Sterling, euro weakness has boosted Irish competitiveness, important given the strength of both the UK and US markets as destinations for Irish exports.

The price of a range of business services charged by domestic service producers to other Irish based businesses has generally increased since the end of 2011. This follows a period of significant price declines over the course of the recession. As of Q3 2014, prices were 6.5 percent above 2010 levels. Following a long period of steady decline the cost of accountancy services has begun to increase, although they remained 5 percent below 2010 levels in Q3 2014<sup>552</sup>.

As discussed earlier in the chapter on Finance for Growth, the cost of credit to Irish business is relatively high relative to the euro area with interest rates on business loans consistently higher than equivalent euro area rates. At the end of 2014 loans up to €1 million were 60 percent more expensive in Ireland compared to the euro area. This differential increased from 31.5 percent in 2013 and 20 percent in 2009. There is, however, a strong level of convergence between retail interest rates in Ireland and the euro area for loans of 1 year, 1 to 5 years, and over 5 years' duration.

In terms of Irish consumer prices, despite adjustment downwards following the recession, in 2014 Ireland remained an expensive place to live. Ireland's current price profile can be described as 'high cost, rising slowly'. Price levels are 16.8 percent above the euro area average. In 2013 Ireland was the 3rd most expensive location in the euro area for consumer goods and services, while costs relative to national income remain high when compared to the euro area average. Across a range of goods and services categories, Irish price levels are above the euro area average in 10 of 12 of the categories<sup>553</sup>.

	<b>We will take the actions necessary to improve Ireland's relative cost competitiveness in the areas that are within our control</b>	
	<b>Energy</b>	
	Position cost competitiveness as well as environmental considerations at the centre of Ireland's national energy policy and its negotiating position in relation to environmental and energy policy at EU level, with improvements in Ireland's environmental sustainability done at least cost.	DCENR
	Bring forward measures to secure the optimal functioning of the North-South Integrated Single Electricity Market so that future energy needs are met at least cost.	CER

552 Ireland's Competitiveness Scorecard 2014, Forfás/National Competitiveness Council

553 Those categories running above the euro area average are alcohol and tobacco, driven significantly by tax policies; health; restaurants and hotels; communication; miscellaneous goods and services; actual individual consumption; housing and utilities; education; food and non-alcoholic beverages; recreation and culture; and transport. Only housing and maintenance, and clothing and footwear, are at or below the EU average, see Consumer Costs and Inflation, Forfás, 2014

	<b>Waste</b>	
	Promote private investment in and competition between cost effective, commercially viable, integrated and diversified waste treatment options across the waste management spectrum through the framework of the new regional waste management plans <sup>554</sup> . These options include energy recovery thermal facilities, which can play a role in meeting renewable energy targets.	Local Authorities
	Implement the EU's environmental obligations in the most cost effective manner, and ensure that Ireland's negotiating position on EU waste policy issues is informed by enterprise competitiveness as well as environmental considerations.	DECLG, DJEI
	<b>Property</b>	
	Drive the efficient and productive use of land, discouraging land-hoarding and helping to resolve the current housing and commercial property challenges, including consideration of mechanisms such as an annual site value tax.	DECLG, DoF
	Fully implement the Construction 2020 Strategy, including creation of a coherent policy response and regulatory certainty around planning and zoning, to ensure delivery of an appropriate mix of commercial property.	DoT and other relevant Departments
	<b>Working with enterprise to increase efficiencies</b>	
	Develop initiatives to ensure that businesses are aware of how best to: <ul style="list-style-type: none"> <li>▪ reduce their energy use; and to</li> <li>▪ exploit waste management reduction processes and technologies.</li> </ul>	DJEI, SEAI, Enterprise Agencies, Business Rep Bodies

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554 Refer also to A Resource Opportunity, Waste Management Policy in Ireland, DCENR, 2012 which sets out how Ireland can minimise waste while maximising the resources we can recover from waste (resource efficiency)

## Infrastructure priorities

### Introduction

The availability of competitively priced world-class infrastructure (e.g. transport, telecoms, energy, environmental) and related services is critical to support enterprise development, by enhancing productivity, competitiveness, connectivity, and helping secure efficiency gains and reduced average production costs. While there has been noticeable improvement in the quality of Ireland's infrastructure in the past two decades, particularly in transport and telecoms access, Ireland still lags countries with which it competes for trade and investment in a number of aspects. This is partly a reflection of a decline in public capital expenditure since 2008. The impact of this reduction in investment has to date been mitigated by weaker demand for infrastructural services during the recession (e.g. reduced road traffic, declines in energy demand). As the country returns to growth, however, targeted investment and reform is required to address existing and likely infrastructural bottlenecks which could constrain enterprise productivity growth, limit sectoral opportunities and adversely affect Ireland's attractiveness as a base for globally connected businesses.

In 2015, the Government will publish a new infrastructure investment framework to 2020, which follows a review of infrastructure requirements and will be informed by the needs of enterprise. Elements of economic infrastructure, particularly those in areas not favourable to private investment, are directly funded by the Exchequer, while in some infrastructure areas, the role of private sector providers has grown significantly in recent years. There is significant scope for Government to improve infrastructure capacity and deliver more cost effective, higher quality services to business users without the need for Exchequer investment, by addressing policy and regulatory barriers. Putting in place the right policy framework is important to give investors the confidence to commit to long term infrastructure projects, and ensure the supply chain has the certainty and resources it needs to deliver effectively.

### Infrastructure priorities for enterprise

Informed by enterprise needs, the Department of Jobs, Enterprise and Innovation in conjunction with the enterprise agencies has highlighted the following priority areas for enhancement and further investment over the medium term:

- **International access:** Excellent and competitively priced air and sea connectivity is crucial in providing links with key trading and investment locations in high growth markets. Air connectivity is crucial in demanding easy access to other company office locations and overseas clients. The continued growth of volume freight trade also demands good international maritime access in the form of increasingly sophisticated, high quality and cost competitive sea freight services to get products to market efficiently.
- **Internal access:** Good international connectivity must be complemented by good internal access to air and sea ports, with an integrated transport system providing for the quick and efficient movement of people and goods. Targeted investment is required to ensure economic activity can be supported, and congestion and its associated costs avoided with an expected rise in demand for transport services with the return of growth.

- Energy:** Investment in energy infrastructure is crucial to ensure security of supply, environmental sustainability, and competitiveness. Policy and regulatory decisions can ensure timely private sector investment at least cost to meet enterprise needs, and tackle Irish energy's controllable cost components. Under the new Energy Policy, this can include helping adapt the fuel mix by incentivising market players to invest in particular fuels or types of generation plants.
- Telecommunications:** World class connectivity is vital to ensure Irish based companies can compete internationally, engage in e-business and e-commerce, and that Ireland can support the development of data intensive sectors such as ICT and digital media. Despite significant investment to date, the focus needs to shift from minimum download speeds to accelerating availability of high upload speeds/symmetrical capability, low latency and low contention ratios. Wireless services, spectrum policy and management also has to support Ireland's attractiveness for emerging wireless services and technologies, continued investment in mobile telecommunications infrastructure and the delivery of innovative and quality services to enterprise. Ubiquitous broadband is also essential to the attraction and development of homeworking initiatives and initiatives to stimulate demand and demonstrated technologies and work practices should be developed and supported.
- Water and waste services:** The water policy and regulatory framework should be designed and implemented to ensure Ireland can deliver certainty and competitively priced quality water services for business, particularly water intensive sectors.

	Delivering sustainable, reliable and quality transport networks, water, energy and telecoms	
	Starting with the Government's new Infrastructure and Capital Investment Plan to 2021, prioritise productive investment in line with the needs of enterprises competing internationally, paying particular attention to the areas set out below where funded from the exchequer.	DPER
	<b>Energy:</b> Increase electricity interconnection to the North, Britain and continental Europe and diversify gas sources and supplies (installation of a twin gas pipeline at Moffat and new gas storage facilities) to ensure security of supply.	DCENR
	<b>Water services:</b> Deliver on Ireland's potential to make water services a competitive advantage in the attraction of mobile investment and the development of indigenous enterprise in water intensive sectors in the longer term.  Ensure that Irish Water prioritises the medium and longer term investments required to address enterprise needs and drives efficiencies in water service delivery - particularly by addressing urgent service constraints in Dublin, and ensuring sufficient capacity in large regional urban centres. Priority for required capacity and quality levels should be given to enterprise and development zone locations.	CER, DECLG  CER, DECLG

	<p><b>International and internal access:</b></p> <p>In <b>air transport</b> implement the 2015 National Aviation Policy to help secure new investment in Ireland's international connectivity, and provide regulatory certainty. In particular investment will need to accommodate the trend towards larger aircraft, and development of Dublin as a hub airport, both of which can help ensure competitive direct access for business passengers, tourists, and freight to long haul destinations in existing and emerging growth markets;</p> <p>In <b>sea transport:</b> Implement the 2013 Ports Policy framework such that the future needs of maritime connectivity are periodically reviewed; that access to a wide range and frequency of port services at competitive prices is ensured; and that deeper water facilities are provided at Irish ports that can accommodate the international trend towards larger shipping vessels;</p> <p>In <b>land transport:</b> Invest to maintain, renew and improve the network to efficiently address congestion and to address bottlenecks in key urban centres; increase use of Intelligent Transport Systems; improve connections to key seaports and airports; underpin identified national and regional spatial planning priorities (including improving access between main urban centres where required and providing access to poorly served regions); and support large-scale employment proposals<sup>555</sup>; and</p> <p>Ensure that our regulatory environment is capable of facilitating the provision of safety focused, cost optimal services.</p>	<p>DTTAS, CAR</p> <p>DTTAS</p> <p>DTTAS, NRA, NTA</p> <p>DTTAS</p>
	<p><b>Telecommunications:</b></p> <p>By 2020, under the National Broadband Plan, secure investment in the provision of high speed and competitively priced broadband services to ensure that no region of the country is disadvantaged<sup>556</sup>.</p> <p>Promote and facilitate the provision of the resilience and low latency that enterprises and particularly data intensive activities require, and work with the market to accommodate ever increasing transatlantic data capacity through direct international fibre connections to Europe and the US<sup>557</sup>.</p> <p>Take a proactive approach to the shaping of the European Commission's plans to further develop the digital single market, and ensure that EU spectrum policy continues to allow Ireland discretion to use the spectrum innovatively and efficiently.</p>	<p>DCENR</p> <p>DCENR</p> <p>DCENR, COMREG</p>

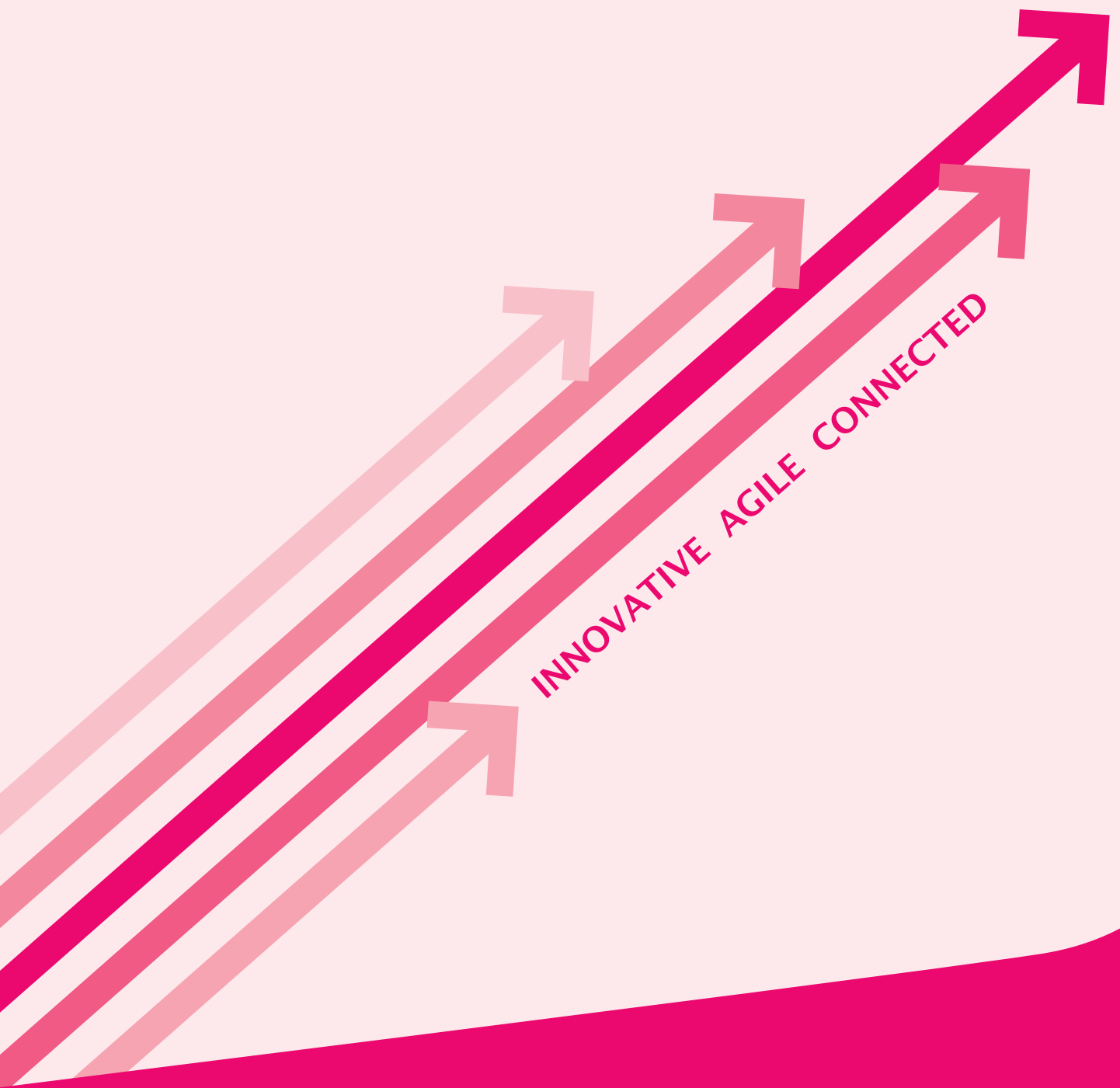
555 Refer also to Investing in our Transport Future – A Strategic Investment Framework for Land Transport, Department of Transport, Tourism and Sport, August 2015

556 The draft Broadband Intervention Strategy, published in July 2015, sets out the Government's proposals to ensure that all business and citizens will have access to high speed broadband services by 2020. Commercial investment in broadband infrastructure and services since the National Broadband Plan (2012) has exceeded expectations

557 It was announced in April 2015 that funding has been secured for a high-speed fibre-optic network between New York and County Mayo. Construction is scheduled to begin in the summer of 2015, and be ready for use in early 2016







# Section F

Effective execution



## Effective execution

### Moving toward a systems approach to enterprise policy

The rationale for state support to enterprises has broadened beyond a simple market failure and externalities concept to encompass a broader set of ‘systems’ considerations. A systems approach sees deeper and more meaningful engagement between the Government and public sector, higher education institutes and enterprises; increased connectedness between complementary policies that can collectively drive sustainable enterprise growth and higher standards of living; and in terms of how we engage with enterprises and optimise the use of available supports to deliver greater economic impact<sup>558</sup>.

A systems approach underlines the fact that enterprise policy does not operate in isolation from other parts of government. Other Government Departments have a key role to play in delivering on the differentiated eco-system – aware of, and informed by, the evolving needs of enterprise in an intensely competitive global environment. A systems approach is informed by evolving thinking in industrial policy that sees the role for the State as a co-ordinator, networker, promoter and informer, in addition to investment partner. Our policy approach over the next decade aims to strengthen the systems approach to enterprise policy in Ireland. In this context, DJEI plays a key role as the advocate for enterprise.

Building on the institutional reforms achieved as part of the Action Plan for Jobs whole-of-Government approach, we will ensure effective implementation of the recommendations and actions set out in this strategy.

	A systems approach to delivering on our ambition	
	Ensure a whole-of-government approach to progressing implementation of Enterprise 2025 to establish a top three competitiveness position, to boost productivity and innovation in the public and private sectors, to sustain full employment and to improve living standards over the longer term.	DoT, Gov Depts

### Engaging effectively with the EU

Ireland’s policies are informed (to a great extent) by EU. It is important that such discussions are informed by our enterprise policy objectives. We need to ensure that the priorities for Ireland’s ongoing engagement with EU in a range of fora are informed by this Enterprise Policy 2025 and that there is a continuous feed-back loop to facilitate and inform any policy flexibilities required in response to new and emerging external influences, while maintaining a focus on Ireland’s longer term enterprise policy objectives.

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558 Beyond Industrial Policy: Emerging Issues and New Trends, Warwick, K. I, OECD STI Policy Papers, No. 2, 2013; Enterprise policy evaluation: Is there a ‘new’ way of doing it?, Lenihan, H. in Evaluation and Program Planning, 34 (4), 323-332, 2011

	<b>Engagement with EU</b>	
	To ensure that Ireland remains an attractive place for Irish owned enterprise to grow, and to win new investment in high-technology areas from foreign and Irish owned enterprises for Europe, we will pursue an active policy at EU level to accelerate progress on: developing the EU Single Market for goods and services; European competitiveness and reform; on international trade agreements to provide access to international markets, including the completion of the TTIP; and to influence progress at WTO level in the removal of all barriers to trade with the aim of achieving positive outcomes.	Gov Depts

## The regulatory environment

Regulation is pervasive within the enterprise environment and has arisen throughout this report in many guises. Regulation’s primary purpose is that of protection - against adverse outcomes (for example, in healthcare, health and safety, environment and habitats, building standards, transfer of sensitive data, employment conditions, competition in markets etc.). How regulation operates is an important characteristic of the business environment.

As highlighted earlier in this report regulation has administrative implications for enterprise in terms of maintaining compliance, sometimes across multiple areas. Minimising the regulatory administrative burden is an ongoing policy priority. A robust and efficient system for investigating and dealing with compliance issues is a key element. In a highly competitive international environment for investment, an efficient and robust regulatory system can be a source of competitive advantage and an attractiveness factor for mobile investment.

Regulatory certainty is another key dimension to the regulatory environment and can be a determining factor in significant investment decisions, be it in relation to property and infrastructure development, or major investments in areas such as pharmaceutical manufacturing or digital media. We need to ensure that the regulatory system in Ireland is one that stimulates investor confidence in longer-term projects. Timely transposition of new EU directives and regulations is an important aspect in maintaining regulatory certainty.

Regulation often raises the bar in relation to quality, standards and safety and as such is an important driver of innovation leading to the development of improved products and services. Government can therefore play a proactive role in stimulating innovation through the regulatory system.

Recommendations are set out pertaining to the regulatory environment in the sections on Innovativeness, cost competitiveness and infrastructure investment.

## Data on enterprise performance

In a context of a changing environment for enterprise generally, there is an emerging lack of data in certain areas important for measuring enterprise policy objectives and outcomes. In some cases the absence of data has been known and highlighted for a number of years, while in others it has more recently emerged.

The report of the Services Strategy Group<sup>559</sup> published in 2008 stated that, despite the importance of the sector, accurate and up-to-date metrics of service activities were not readily available. This remains the case today, for example there is very limited information available on the composition of services exports.

In another example, the assessment and discussion of Ireland's productivity performance earlier in this report was limited by the dearth of up to date data. Although industry-wide data is available for years up to 2014 (Conference Board Total Economy database) or up to 2012 (OECD), the most recent sectoral data series ends in 2007 (KLEMS EU database). That data shows the significant variation between sources and the extent to which national productivity measures can mask significant changes at sectoral level. The most effective interventions to boost productivity such as skills programmes, technology adoption, business process improvements, and regulatory change, will be sector specific but progress in this area is hampered by the lack recent sectoral productivity data. Given that the composite data required to build such a dataset is likely to be already collected at sectoral level (e.g. employment, hours worked, compensation, output, capital stock etc.), the potential for producing such a dataset should be explored as soon as possible.

Outward Direct Investment (ODI) around the world has become an important internationalisation strategy for firms, yet gathering data to measure and support this activity is a persistent challenge. For example, while it is possible to source data on direct investment income flows from the CSO's Foreign Direct Investment publication, and data on principal trading aggregates for services enterprises<sup>560</sup> from the CSO's Annual Services Inquiry and Balance of Payments publications, and data on foreign affiliates (e.g. country in which it is located, activity of the affiliate, turnover of the foreign affiliate, and number of persons engaged in the foreign affiliate) from the CSO's Outward Foreign Affiliates survey, the data is not linked. This means that basic questions about ODI activity from Ireland cannot be answered. The Department of Jobs, Enterprise and Innovation's own surveys do not currently provide suitable data to overcome this problem, but this is an area currently under consideration.

Turning to more recent examples, there are a number of phenomena associated with the structuring of multinational global corporate footprints that have implications for the true measurement of economic activity reflected in Ireland's economic statistics and which in turn impacts on evidence-based policy-making. Examples of this include the impact of large retained earnings of redomiciled PLCs located in Ireland<sup>561</sup>; the impact of contract manufacturing (Ireland as a net contract manufacturing user); the potential effects of incorporating aircraft leasing firms fully into the Irish national accounts; and understanding the general impact of increased participation in global value chains (GVCs) in terms of domestic value added in the context of both manufacturing and services.

While some or all of these issues may not be peculiar to Ireland, it is important that strategies are in place to mitigate, if not remove, their impact on our ability to assess and devise enterprise policy into the future.

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559 [http://www.forfas.ie/media/forfas080912\\_services\\_strategy.pdf](http://www.forfas.ie/media/forfas080912_services_strategy.pdf)

560 For example, turnover, stocks, capital assets, personnel costs, VAT, purchases, employment, location, exports, imports

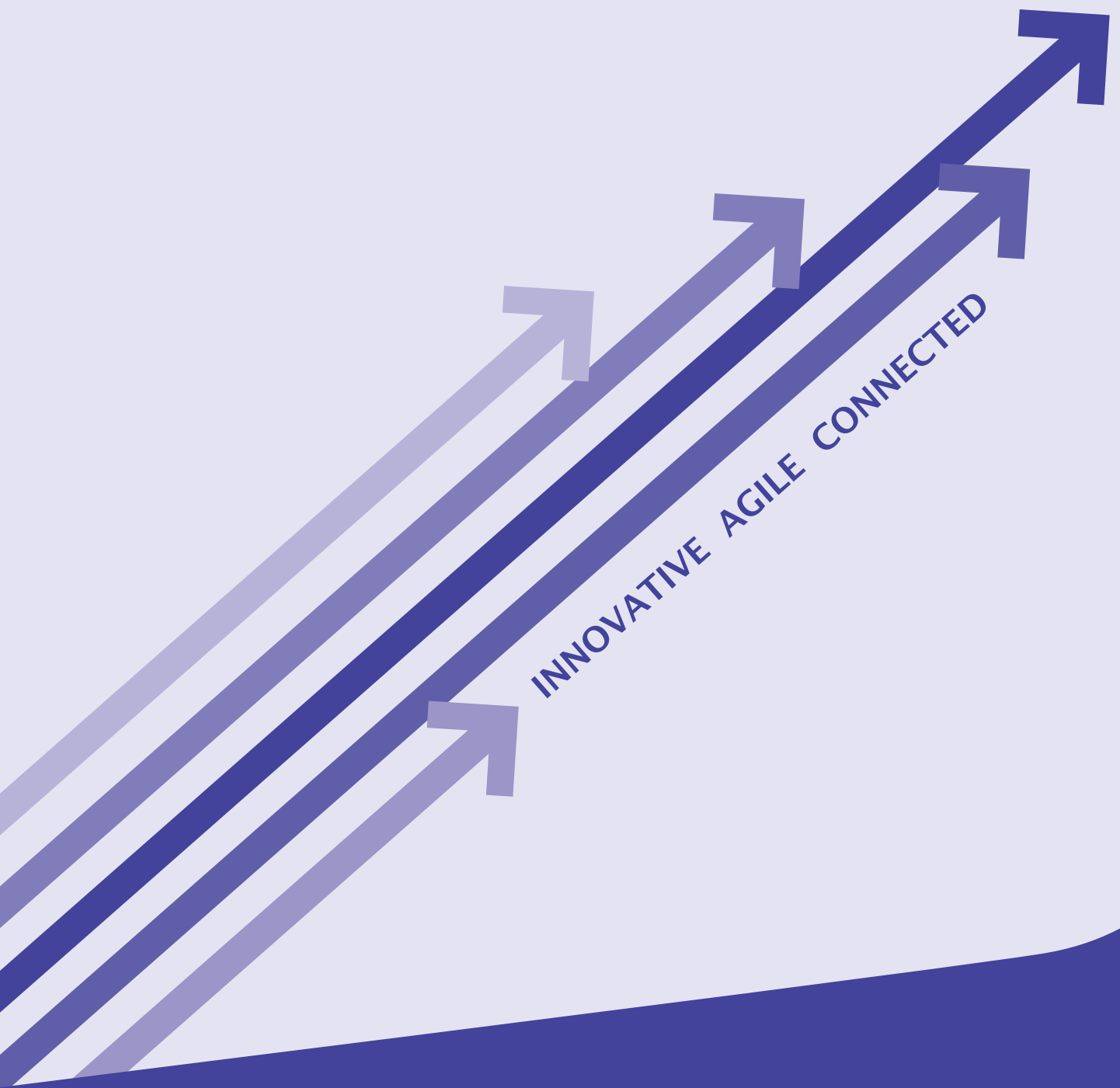
561 The Effect of Redomiciled Plcs on GNP and the Irish Balance of Payments, FitzGerald, J, 2013 and Problems Interpreting National Accounts in a Globalised Economy – Ireland, FitzGerald, J, 2015

It is also important to continue to assess Ireland’s enterprise and economic performance in an international context, and the National Competitiveness Council has an important role in this respect. The Small Advanced Economies Initiative provides a useful vehicle through which Ireland’s progress can be tracked alongside similarly sized economies<sup>562</sup>.

<b>Strengthening data collection</b>		
	Strengthen data collection and monitoring of metrics in relation to the expanded range of international business expansion modes, including ODI and M&A with a particular focus on determining more accurately the economic impact of such activities within the Irish economy.	DJEI, CSO
	Adapt existing surveys to include relevant questions that will serve to increase our understanding of where and how cross cutting technologies and disciplines are being applied and where and how they add value (ICTs, Green and Design). Such analysis would serve to inform the development of policies and facilitate ongoing monitoring of developments.	DJEI, CSO

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562 See Appendix XII for further detail on the Small Advanced Economies Initiative



# Appendices





## Appendix I Measuring success

### Measuring success (1) – Overarching national outcomes

	Overarching national outcomes	Metric	Current Performance	Potential by 2020	Baseline year
<b>1</b>	<b>Employment &amp; regional potential</b>				
	2.180m in employment by 2020	Annual Employment Growth (000's)	1,958.7	2,180	Q2 2015
	71 percent of 20 to 64 year olds will be in employment by 2020	Employment Rate 20-64 year olds	67	71	2014
	Optimising regional potential	Regional unemployment rates will not be higher than 1 percentage point than national unemployment rate	<3%	<1%	Q1 2015
<b>2</b>	<b>Export-led growth</b>				
	Increasing exports	Grow Irish owned exports by 6-8% per annum by 2020 <sup>563</sup>	€16.3bn	€24-€26bn	2014
<b>3</b>	<b>Innovativeness</b>				
	Increase Investment in RD&I	GERD percentage of GNP	2.05%	2.5%	2012
	Innovative Culture	SMEs introducing product or process innovations (as % of all SMEs)	35%	45%	2015
<b>4</b>	<b>Talent</b>				
	Highly skilled workforce	Tertiary education attainment 30-34 year olds	52.2%	60%	2013
<b>5</b>	<b>Competitiveness</b>				
	Rank in top 3 most competitive small countries in the world	World Bank Doing Business (189 economies)	13 <sup>564</sup>	1-3	2015
	Sustaining the profitability of Irish owned firms (across all sectors)	Gross operating surplus as % of turnover (CSO Business in Ireland) (7.3% in 2010)	9.6%	10%	2012
<b>6</b>	<b>Living standards</b>				
	Restoration of living standards to pre-recession levels and maintain an above average position relative to the Euro-19 over the period to 2025 and beyond	GNI per capita in Purchasing Power Standards (Eurostat) (EU-19 =100)	98	105	2013

<sup>563</sup> Excludes foreign owned entities within EI portfolio, e.g. food

<sup>564</sup> Other small countries currently ranked ahead of Ireland include Singapore (1), New Zealand (2), Hong Kong (3), Denmark (4), Finland (9) and Iceland (12)

## Measuring success (2) - Enterprise level performance and potential

	Firm level activity	Metric	Current Perform-ance	Potential by 2020	Baseline year
<b>1</b>	<b>Sustainable enterprise</b>				
	Increase no. of start-ups by 25 percent	No. of enterprise births per annum	12,551	15,700	2012
	Increase no. of enterprises surviving to 5 years by 25 percent	Survival rate of start-ups (5 years)	6,513	8,141	2007-2012
	Increase in scaling activity	EI Firms >€3m sales out of Ireland	860	1,100	2013
		EI Firms > €20m sales out of Ireland	225	300	
		EI Firms >€100m sales out of Ireland	54	90	
<b>2</b>	<b>Export growth &amp; employment</b>				
	Increase Irish-owned export intensity	Irish owned exports as % of sales	51%	55%-60%	2014
	Broadening base of Irish owned exports	Beyond UK markets by €5-€6 billion	€10bn	€15-€16bn	2014
	Increase EI employment	Increase employment by 32,000	180,000	212,000	2014
	Increase in IDA employment	Increase employment by 35,000 by 2019 (extrapolated to 2020 at 42,000)	175,000	216,000	2014
	Increase FDI investments	900 new IDA supported investments by 2019 (extrapolated to 2020 at 1,080)	779	1,080	2010-2014
<b>3</b>	<b>Innovation</b>				
	Increase in RDI active firms	No. of EI R&D Active Firms >€100k	858	1,000	2011-2014
	Increase in RDI active firms of scale	No. of EI R&D Active Firms >€1m	139	220	2013
	Increase in FDI R&D investment	Win cumulative €3bn in RDI investment by 2019 (extrapolated to 2020 at €3.6 bn)	€2.5bn	€3.6bn	2010-2014
	Increase in Foreign Owned RDI active firms	120 additional companies to engage in R&D by 2019 (extrapolated to 2020 at 145)	330	475	NA
<b>4</b>	<b>Connectedness</b>				
	Increase no. of enterprise collaborations by a third	No. of enterprise collaborations with HEIs/PROs <i>(note different basis for metric applies by agency)</i>	839 (EI) 900 (SFI)	1,200 1,125	2013
	Increase in Direct Economic Expenditures by 25 percent	ABSEI Direct Economic Expenditure (Irish materials and Irish services)	€28.8bn	€36bn	2013
	Innovative SMEs collaborating with others	Innovative SMEs collaborating as a percentage of SMEs	35%	45%	2015
<b>5</b>	<b>Talent and skills development</b>				
	Double investment in training and upskilling for employees	Expenditure on training per employee	€543	€1,100	2013

### Measuring success (3) - Key monitoring indicators

The following indicators on productivity and export performance are useful in monitoring comparative performance on an ongoing basis.

	Monitoring Indicators	Metric	Current Performance	Potential by 2020	Baseline
1	Productivity	GVA per person engaged for indigenous sectors	€40,900 (80% of UK & Germany, 60% of Denmark levels)	Equivalent to UK & Germany	2011
2	Productivity	Output per hour worked, total economy, percentage change at annual rate <sup>565</sup>	2.5%	Sustain an EU top 5 position	2008-2013
3	Export led growth	% Share of World Trade Manufacturing	0.62%	36 <sup>th</sup> world ranking	2014
4	Export led growth	% Share of World Trade Services	2.70%	11 <sup>th</sup> world ranking	2014

### Measuring success (4) – Monitoring sustainable employment growth

The importance of full employment being on a sustainable basis is a core objective of Enterprise 2025. The following are broad indicators of what constitutes a sustainable balance of employment across exporting and non-exporting sectors of the economy based on the pattern of economic performance generally over the past 15 years<sup>566</sup>. Multiple factors influence the sectoral distribution of employment so the metrics presented here should be treated as indicative only. However, movement outside of the ranges set out below would trigger more in-depth analysis.

	Monitoring Indicators	Metric	Sustainability metric
1	Employment in domestic activity	Proportion of the labour force employed in the seven sectors that comprise the 'domestic' component of the economy <sup>567</sup>	45% to 47%
2	Gap between employment in domestic & exporting activity	Difference between the proportion of the labour force employed in domestic sector activity and the proportion employed in exporting activity <sup>568</sup> (% point differential)	<22%

<sup>565</sup> Sectors contribute variously to total economy productivity performance. Monitoring of the total economy performance should be accompanied by analysis at a sectoral level

<sup>566</sup> Further details in relation to monitoring of sustainable employment growth is contained in Appendix III

<sup>567</sup> Incl. construction, wholesale and retail, transport and storage, accommodation and food services, professional, scientific, technical, administrative and support services, and other services, QNHS

<sup>568</sup> For the purposes of this particular analysis, exporting activity employment is estimated using the CSO QNHS data, specifically NACE codes B-E (Industry) and J (Information and communication), and data from DJEI's Annual employment Survey (Internationally Traded Services)

## Appendix II

### Overview of technology disruptors and their impacts

Technology	Impacts (selective)
<b>Mobile internet</b>	By 2015, wireless web use is expected to exceed wired use New ways of knowing, perceiving and interacting with the physical world Rapid evolution: intuitive interfaces, new formats, wearable devices
<b>Automation of knowledge work</b>	Driven by advances in A.I., machine learning and natural user interfaces (voice recognition) and sophisticated analytics Augmenting talents of skilled employees or fully automating certain roles
<b>Internet of Things</b>	Embedding sensors and actuators in machines and other physical objects – rapidly spreading Allows organisations to manage assets (including remotely), optimise performance, and create new business models
<b>Cloud technology</b>	IT resources such as computation and storage available on an as-needed basis Enabling explosive growth of internet-based services, improving the economics of IT, and generating new business models
<b>Advanced robotics</b>	Advanced robots have enhanced senses, dexterity and intelligence Potential to substitute humans in more manufacturing tasks and service jobs (esp. cleaning and maintenance). Driving innovation in healthcare – surgical robots, robotic prosthesis etc.
<b>Autonomous/near autonomous vehicles</b>	Machine vision, A.I., sensors and actuators enabling creation of cars, trucks, boats, aircraft etc. that are partially or completely autonomous Suggests revolution in ground transportation – regulations and public acceptance permitting. Benefits re safety, reduced CO2 emissions, productivity etc.
<b>Next generation genomics</b>	Convergence of science of sequencing with big data analytics capabilities Potential for profound impacts in medicine, agriculture, biofuels, drug discovery
<b>Energy storage</b>	Includes batteries and other systems that store energy for later use e.g. lithium-ion batteries. Further advances in energy storage would make electric vehicles cost competitive with internal combustion engines
<b>3D printing</b>	Performance of additive manufacturing machinery is improving, the range of materials is expanding and cost is declining rapidly Enables on-demand production, reduces waste, create more complex objects, e.g. bio-printing
<b>Advanced materials</b>	Include smart materials that are self-healing, self-cleaning, memory metals, nanomaterials etc. Advanced nanomaterials include grapheme and carbon nanotubes. Nanoparticles are being researched for applications in pharmaceuticals
<b>Advanced oil and gas discovery</b>	Ability to extract so-called unconventional oil and gas reserves from shale is gathering force Potential to unlock new types of reserves including coalbed methane, tight sandstones and methane clathrates boosting availability of energy from fossil fuels for decades
<b>Renewable energy</b>	Solar cell technology progressing rapidly and costs is declining. Solar and wind power increasingly being adopted at scale in advanced economies China, India and other emerging economies have aggressive plans for solar and wind adoption which will enable further rapid economic growth

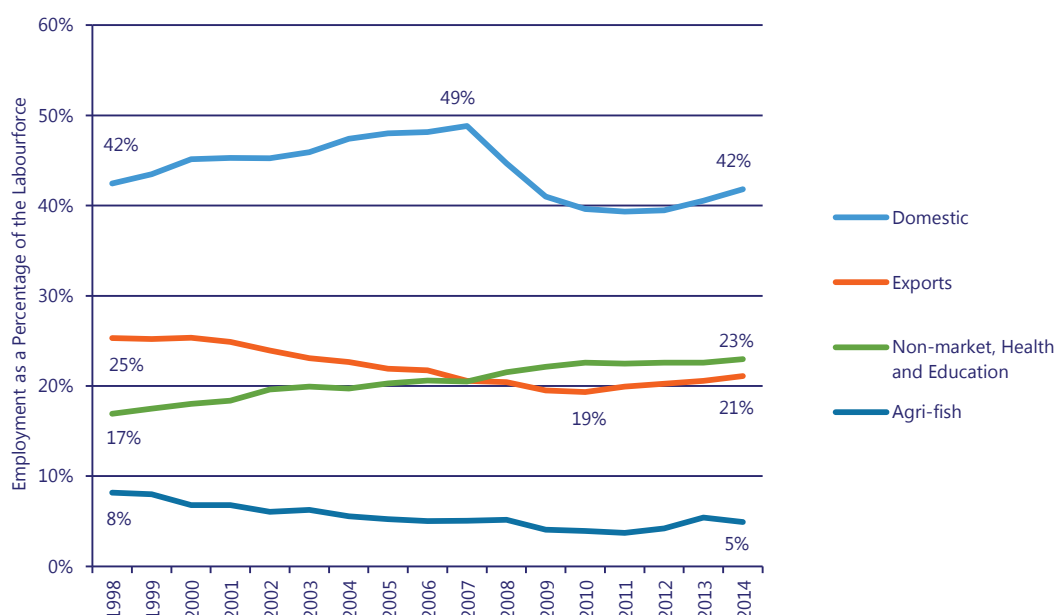
Source: Disruptive technologies: Advances that will transform life, business and the global economy, McKinsey & Co, 2013

## Appendix III

### 2.1 million people at work: sustainability and assessment

The importance of full employment being on a sustainable basis has been stated on numerous occasions by the Minister for Jobs, Enterprise and Innovation, and the point is repeated clearly in the Government’s 2015 *Spring Economic Statement*. The sustainability (or unsustainability) of employment is to a large extent tied to the macroeconomic activity generating it, as is obvious from the composition of national GDP over the period of the boom, and its consequences for the crash. In short, the boom was driven by a surge in consumption and investment activity which dwarfed the contribution of net exports to national wealth. As a proportion of overall economic output, government spending was more or less steady. This macroeconomic profile had a significant impact on the sectoral distribution of employment, as illustrated below.

**Figure A3.1** Estimated sectoral breakdown of employment, as a percentage of the labour force, 1998 – 2014



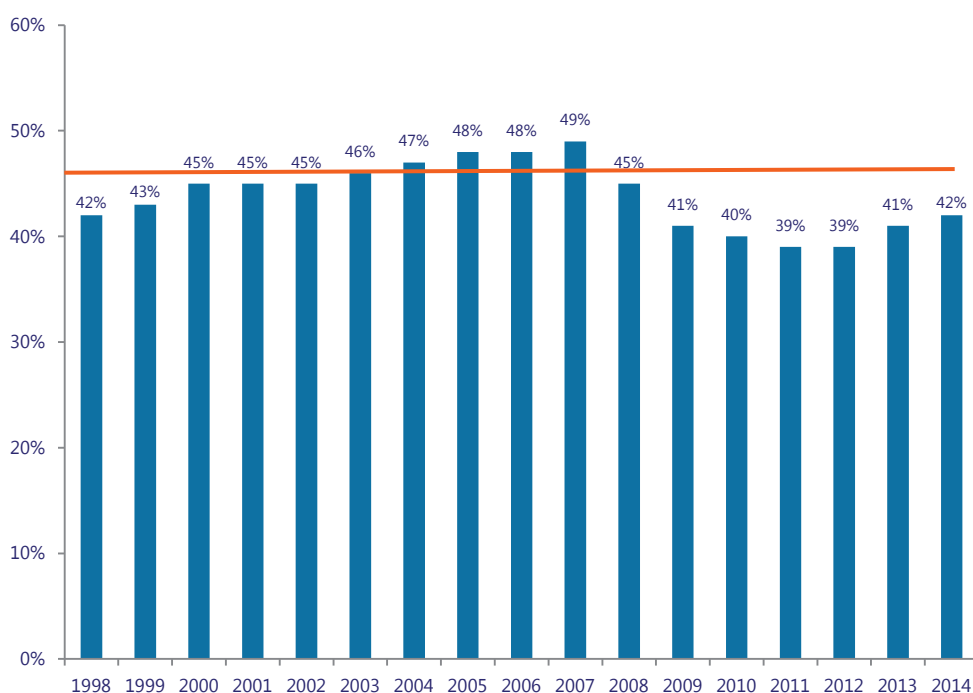
Source: DJEI Strategic Policy Division calculations based on CSO QNHS and DJEI’s Annual Employment Survey

How full employment of 2.1 million would be precisely distributed across the categories used in the illustrative categories above is difficult, if not impossible, to say. The factors influencing the sectoral distribution of employment are many and complex, and the environment uncertain. They include demand factors (e.g. international/national trends in goods and services, global economic performance, international demographics, trends in FDI etc.), and supply factors (e.g. the skills pipeline, materials and input costs and availability, domestic policies and incentives etc.). In addition, the numbers of actors, policies and decisions influencing the sectoral distribution of employment (and, hence, its sustainability) number the thousands, if not millions. Finally, a particular sectoral distribution of employment is not a policy outcome that is subject to the will of the government. This complex policy environment is one where heuristics can be useful.

Heuristics are processes that deliberately ignore information and enable fast decisions that can be useful in light of the complexity of the forces influencing the sustainability of employment, uncertainty of the environment, and limitations of policymakers and resources. They are not intended to replace deeper analysis but can flag the necessity to undertake it. That said, in contrast to the widely held view that less processing reduces accuracy, the study of heuristics shows that less information, computation, and time can in fact improve accuracy<sup>569</sup>. Collecting and processing the information necessary to fully understand employment sustainability and to know when precisely (and what) corrective policy action should be taken, is costly, perhaps punitively so.

Consider two examples. First, policymakers could consider Ireland’s employment profile to be approaching unsustainability if/when the proportion of the labour force employed in certain economic activity reaches X percent. Of course, there will be debate over what X should be, and what sectors should be included. One possibility would be to look at the proportion of the labour force employed in the seven sectors which comprise the “domestic” category set out in Figure A2.1 above. (i.e. construction, wholesale and retail, transport and storage, accommodation and food services, professional, scientific, technical, administrative and support services, and Other Services as per the CSO’s QNHS).

**Figure A3.2 Estimated proportion of labour force employed in domestic activity, 1998 – 2014**



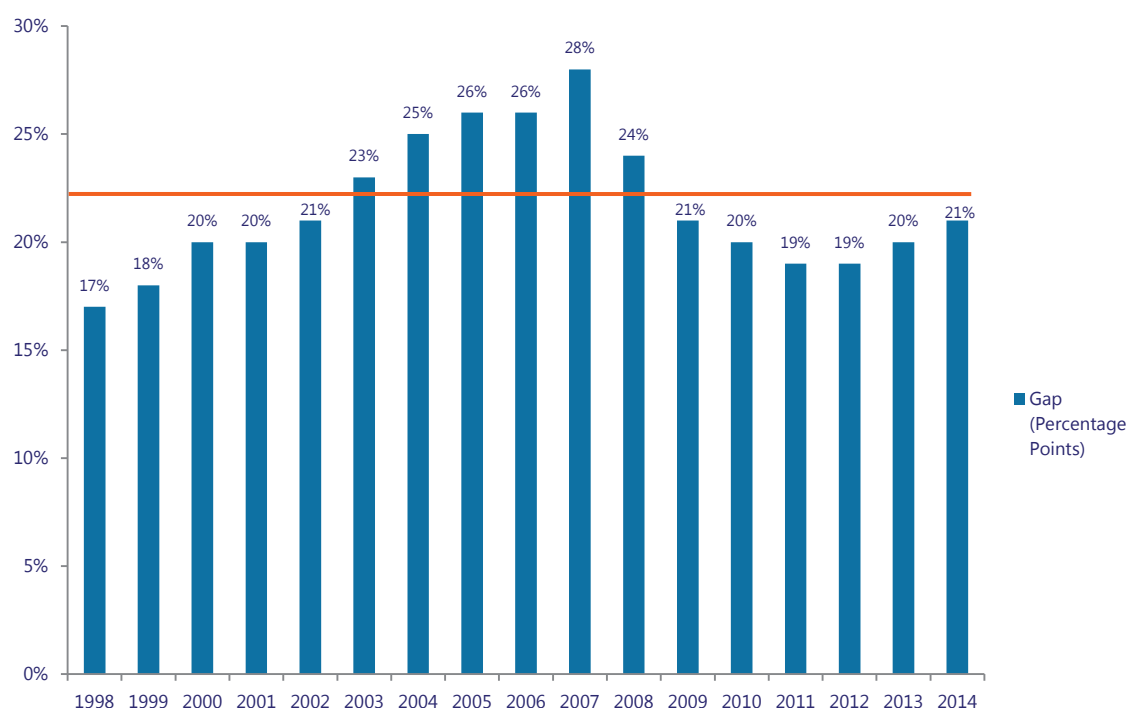
Source: CSO QNHS data, DJEI SPD categorisation (line indicates 46 percent level)

569 See Heuristics: The Foundations of Adaptive Behaviour, Gigerenzer, Hertwig and Pachur (eds.), 2011, The Dog and the Frisbee, Haldane, Bank of England, 2012, and A Complexity Theory for Public Policy, Morçöl, 2012.

Consideration could be given to using the proportion from, say the early 2000s (45 - 47 percent) as a safe ceiling heuristic for domestic-activity when examining the sustainability employment distribution across economic activity. This data has the benefit of being extracted directly from the QNHS and has not been subjected to any calculation or extrapolation, merely aggregation.

Second, as an alternative or as an addition, one could consider the relative proportions of the labour force employed in domestic sector activity (above) versus exporting activity. It may be that it is not the proportion of domestic sector employment on its own *per se* that is important for sustainability, but rather the extent to which that proportion exceeds or grows relative to employment supported by exporting, which can be considered more sustainable.

**Figure A3.3 Estimated gap between proportion of labour force employment supported by domestic and export activity, 1998 – 2014**



Source: DJEI Strategic Policy Division calculations based on CSO QNHS and DJEI’s Annual Employment Survey (line indicates 22 percent level)

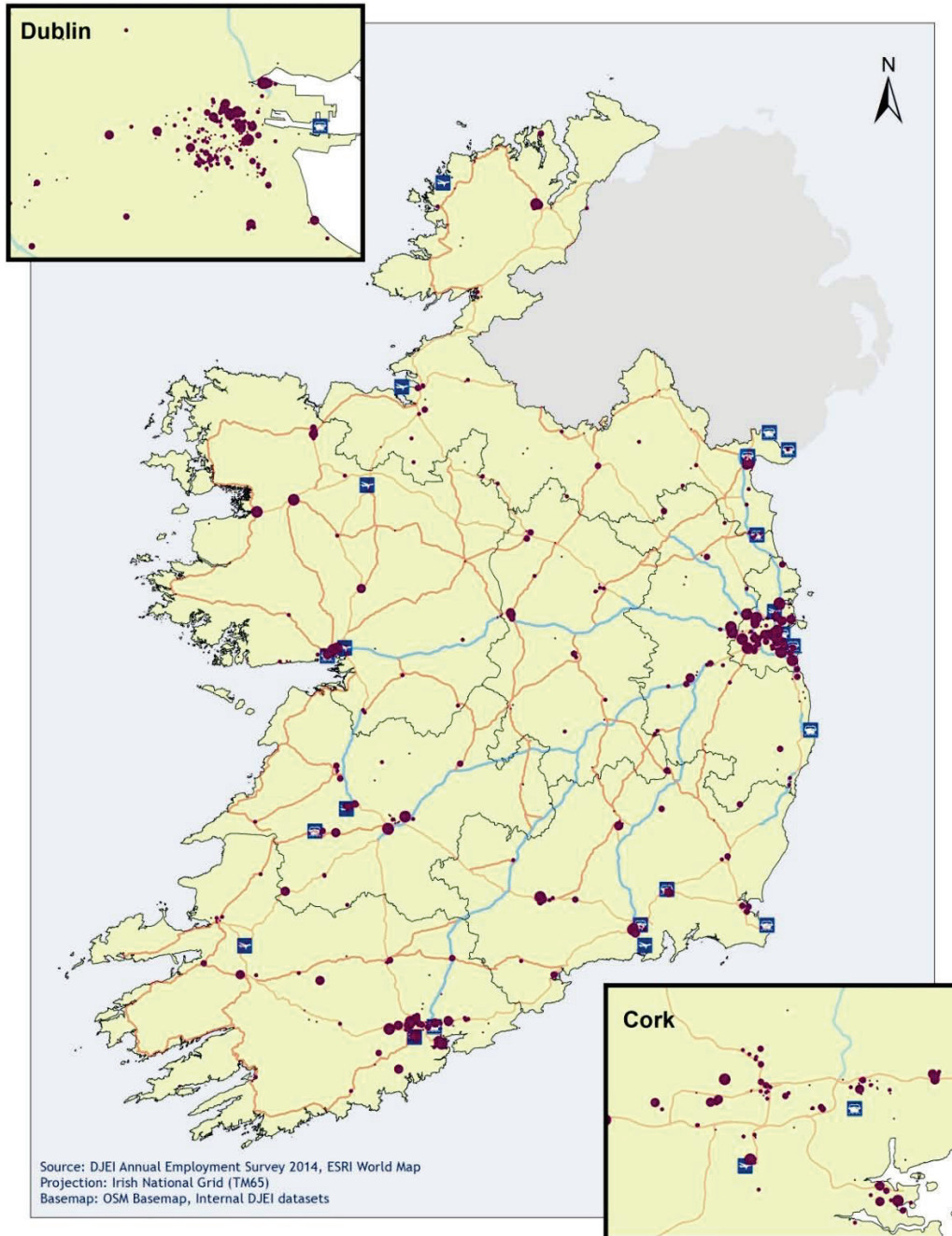
Unlike the first example, this data does not have the benefit of being extracted directly from the QNHS, as it is subjected to calculation, extrapolation, and categorisation. It does however offer another potential option i.e. policymakers should consider Ireland’s employment profile to be approaching unsustainability if/when the proportion of the labour force employed in domestic activity exceeds that of exporting activity Y percent. For the purposes of this particular analysis, exporting activity employment is estimated using the CSO QNHS data, specifically NACE codes B-E (Industry) and J (Information and communication), and data from DJEI’s Annual employment Survey (Internationally Traded Services). Again, there will be understandable debate over what Y should be, and what sectors should be included. Consideration could be given to using the gap from, say the early 2000s (21 - 23 percent) as a safe differential heuristic for domestic-versus-exporting-activity when examining the sustainability of employment distribution across the economy.



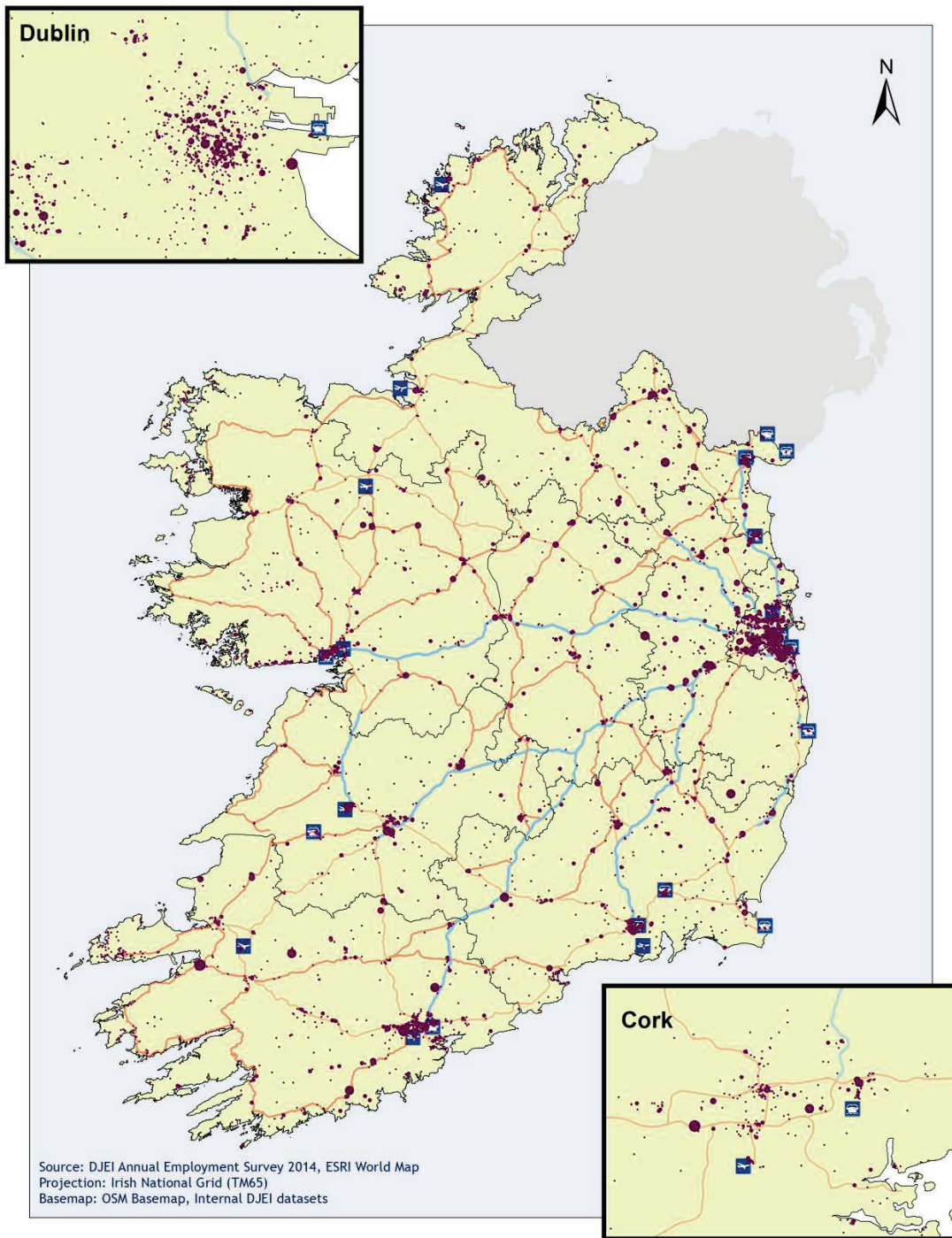
Given recent labour market performance, the Department of Finance forecasts for growth, and the employment targets of the enterprise development agencies, the Government's target of 2.1 million at work in 2018 can be approached with a certain degree of optimism. However, Ireland cannot afford to lose sight of the importance of sustainable jobs growth, and the heuristics proposed here (or some alternative) can assist in this regard. Avoiding repetition of the most recent employment crisis will mean keeping a check on the extent to which jobs in Ireland are concentrated in more vulnerable, largely domestically trading sectors such as construction, retail, accommodation and food. The challenge for policy makers is twofold: first, establish assessment criteria for employment sustainability and second, consider what policy options are open to Government to correct unsustainability, well in advance of its occurrence and detection.

## Appendix IV

Map A4.1 Distribution of all agency supported foreign owned companies in 2014, classified by employment size



Map A4.2 Distribution of all agency supported Irish owned companies in 2014, classified by employment size

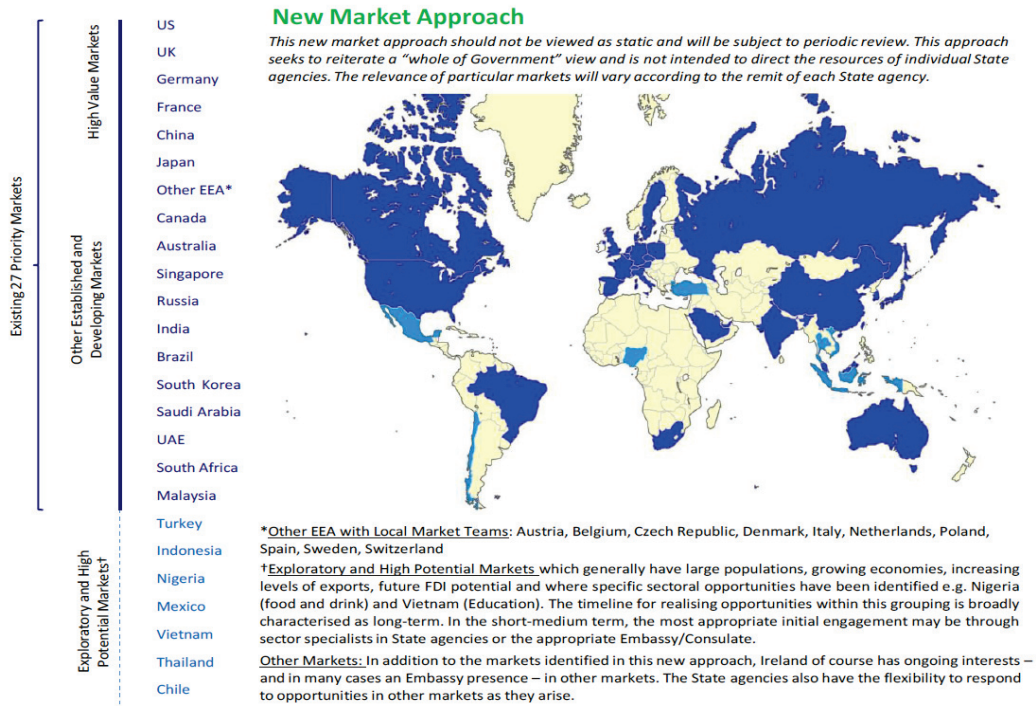


- |                         |               |                 |            |                 |
|-------------------------|---------------|-----------------|------------|-----------------|
| <b>Employment range</b> |               | — Motorway      | ⚓ Seaports | ■ NUTS 3 Region |
| • 1 to 50               | • 501 to 1000 | — National Road | ✈ Airports |                 |
| • 51 to 250             | • 1000 +      |                 |            |                 |
| • 251 to 500            |               |                 |            |                 |

## Appendix V

### Review of Trade, Tourism and Investment Strategy 2010-2015

#### New Market Approach - Segmentation



#### High Level Targets

**Jobs:** Increase the number of new jobs directly associated with exporting enterprises by over 150,000, in manufacturing, tourism and internationally trading services, and with the creation of a similar number of new indirect jobs: IDA Ireland: 75,000; Enterprise Ireland: 60,000; Tourism: 15,000

**Exports:** Increase the value of exports by State agency assisted indigenous companies by 33 percent and diversify the destination of indigenous exports<sup>570</sup>

**Tourism:** Revised target and new metrics: increase overseas visitor numbers to 7.2 million, visitor revenue of €3.6 billion, and promotable visitor revenue of €2.3 billion

**Inward investment (FDI):** Secure an additional 780 inward investment projects through IDA Ireland

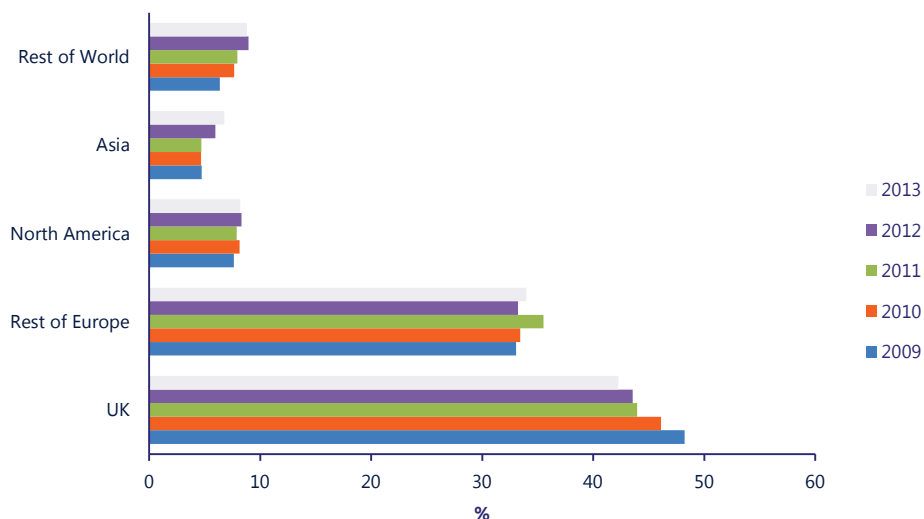
**Education (new target):** Increase the direct economic contribution of international education to the Irish economy, from €682 million in 2010 to €900 million.

570 Increase share of food and drink exports to countries outside the UK, from 56% to 62%; Increase share of other exports to countries outside the UK, from 57% to 63%; Increase the share of food and drink exports to Asia, from 4.3% to 7%

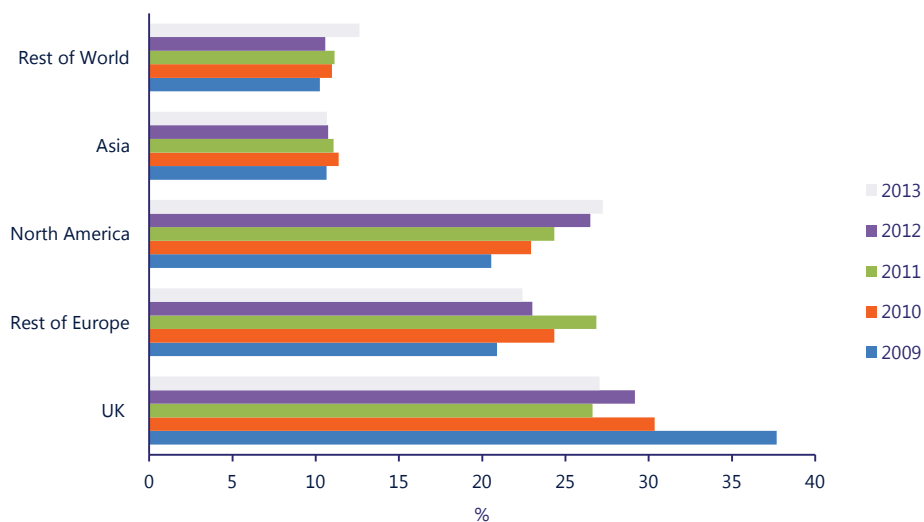
## Appendix VI

### Destination of Enterprise Ireland client-company exports 2009-2013

**Figure A6.1** Destination of Manufacturing Firms' Exports (Enterprise Ireland) – 2009 to 2013



**Figure A6.2** Destination of Services Firms' Exports (Enterprise Ireland) – 2009 to 2013



Source: DJEI Annual Business Survey of Economic Impact (special calculations, unpublished data)

## Appendix VII

### Cluster enabling policies – international examples<sup>571</sup>

**The nuancing of approaches to the maturity of the cluster** landscape and enterprise base. For example, in Baden Württemberg clustering is more developed and the policy approach therefore focuses on programmes that bring excellence to operations and improve standards within existing clusters. In France, calls for tenders and more directive intervention are used to kick-start the clustering process. This accords with international research which shows that clusters at different stages of maturity exhibit different characteristics and different levels of connectivity<sup>572</sup>;

**The role of cluster managers is key** - they build connections between participants from different (sometimes opposed) backgrounds and play a key role in communications, facilitation and networking. The project manager typically possesses a level of expertise and familiarity with the sector/activity base which facilitates efficient engagement with specialised researchers and academics and industry players;

**The fact that strong clusters are not necessarily bounded** by local or regional administrative boundaries, just as local economic dynamics are similarly unconstrained spatially;

**The role of private sector funding in building a sense of ownership.** The contribution by members to the running of the cluster initiative builds a sense of ownership and also sets a level of expectation regarding a return to members in terms of quality of service and impact. The private:public sector funding mix may shift over the lifecycle of a cluster initiative with public sector contribution relatively higher at the outset and reducing thereafter;

**Clusters become attractiveness assets when they have managed to build a strong international brand and effective networks.** A strong brand and cluster dynamic can aid in the attraction of further investment and bolster the reputation of the location for business. The case studies also highlighted the fact that creating a common brand is only one aspect of building a reputation and impact internationally. The 'Maritime Bergen' cluster in Norway has struggled to build a shared marketing strategy to date.

**The State cannot 'create' clusters;** rather its role is that of enabler, and to intervene on a supportive basis to accelerate activity<sup>573</sup>. The most successful cluster policies have generally focused on supporting activities that already make strong contributions to economic growth and where there are pre-existing collaborations in evidence.

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571 Based on research undertaken by Ernst & Young for DJEI

572 The Cluster Initiative Greenbook 2.0, Lindqvist, G., Ketels, C., and Sölvell, Ö., 2013

573 'Cluster initiatives are the 'lubricant' that allows the 'engine' of cluster dynamics to operate at higher speed', The Cluster Initiative Greenbook, Sölvell, Ö., Lindqvist, G. and Ketels, C., (1st Ed.), Stockholm, Ivory Tower, 2003



New areas of opportunity - a snapshot

Business models, sectors and activities, emerging market opportunities ....

(in alphabetical order)

New area of opportunity	Brief synopsis	Building on existing capabilities
<p>Agri-tech</p> <p>Smart (precision) agriculture</p>	<p>Smart agriculture (also known as precision agriculture) is the application of ICT to traditional agriculture to develop a smart agriculture capability, which can facilitate better productivity, yields, safety, and environmental sustainability, particularly in dairy farming. Smart agriculture captures and analyses data to help drive decision support systems to establish a systematic approach to managing on farm factors. It can be applied to, and enhance animal welfare, soil and grassland management, biodiversity, traceability and food safety, and ultimately an environmentally and competitively sustainable intensification of production.</p> <p>Smart agriculture has a particular relevance for Ireland in the context of the current major expansion of the dairy industry with the lifting of the EU's milk quota system. Ireland is also home to some of the world's leading food and technology companies. International population growth and growth of the middle class in emerging markets together with ageing populations are driving increased consumption of dairy proteins and creating higher demand for increased yields. Concerns about environmental sustainability and food safety create a need for increased monitoring capability.</p>	<p>Information and Communications Technology</p> <p>Data analytics</p> <p>Cloud computing</p> <p>Agri-food sector</p> <p>Research infrastructures</p>
<p>Advanced manufacturing : 3-D printing/additive manufacturing</p>	<p>3-D printing (or additive manufacturing) introduces a completely new approach to traditional manufacturing processes (which involve shaping, casting, moulding, forging, bending, cutting materials into their approximate shape) by building up the product layer by layer into a three dimensional form under digital control from a master design file. Powdered metals are melted using a laser layer by layer to create the final 3-D shape.</p> <p>This means extremely complex products can be made without the normal stresses and defects found in traditional manufactured objects. 3-D printing is currently being used in relatively specialised areas such as aerospace, and in small sizes and relatively small volumes. Over the medium term it offers the scope to customise at no incremental cost and produce fewer items at lower cost, than would be the case with assembly line production.</p>	<p>Manufacturing</p> <p>Irish Centre for Manufacturing Research</p>

New area of opportunity	Brief synopsis	Building on existing capabilities
Aquaculture	<p>Aquaculture is the farming of aquatic organisms such as fish, crustaceans, molluscs and aquatic plants. It involves cultivating freshwater and saltwater populations under controlled conditions. Aquaculture is a labour intensive industry providing high value products; its expansion will result in job creation in peripheral coastal communities, and will drive the expansion of the seafood processing industry through increased raw material supply. In aquaculture there is strong global demand for both finfish (salmon) and shellfish (mussels, oysters).</p> <p>Ireland is well placed to increase its growth of these products, and needs to meet EU regulatory obligations set out in EU Environmental Directives (Natura Directives) in order to capture the full potential of the industry. Ireland's reputation in ICT can also reinforce trust in the Irish aquaculture stock, through the development of traceability systems to support food safety and trade.</p>	<p>Fish farming</p> <p>Seafood Processing</p> <p>ICT</p>
Big Data	<p>Big data is a broad term for data sets so large or complex that traditional data processing applications are inadequate. Data sets grow in size in part because they are increasingly being gathered by cheap and numerous information-sensing mobile devices, aerial (remote sensing), software logs, cameras, microphones, radio-frequency identification (RFID) readers, and wireless sensor networks. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualisation, and information privacy. Real-time data and predictive analytics is relevant for a vast range of sectors and activities and informs effective decision making, increased efficiencies, reduced risk, spot business and consumer trends, facilitate the delivery of targeted and customised services and solutions etc.</p> <p>We have established a task force on Big Data to build on existing enterprise strengths to make Ireland a leading country in Europe in the area of Big Data and Data Analytics.</p>	<p>ICT, sensor technologies, analytics</p>
'Born Globals'	<p>A born global is a venture (predominantly a knowledge intensive, high technology enterprise) launched to exploit a global niche from the first day of its operations. It is international by design and tends to be relatively small with fewer financial, human and tangible resources compared to large multinational enterprises usually considered dominant in global trade and investment. It tends to adopt a differentiation strategy by developing designs and highly distinctive products that target niche markets, which may be too small for the tastes of larger firms.</p> <p>A growing number of these entrepreneurs and start-ups are willing to go anywhere to make a successful business and</p>	<p>Ireland's cluster of digital enterprises</p> <p>Dynamic city regions</p> <p>Broadband infrastructures</p>



## DJEI ENTERPRISE 2025

New area of opportunity	Brief synopsis	Building on existing capabilities
	<p>want to do it rapidly. Their global footprint is determined by access to financing, talent, innovation and proximity to clients – an ecosystem that facilitates the flow of knowledge, ideas and experience within a 'community'. They are drawn in the main to cities where these factors coincide.</p> <p>ICT allows them to process information efficiently and communicate with partners and customers worldwide at practically zero cost. While by their nature investments by these companies are smaller on average initially in terms of job numbers, the expectation associated with these firms is that they will grow rapidly from their new Irish base.</p>	
Composites and advanced materials	<p>New materials and processing methods e.g. smart, advanced and next generation materials, have the potential to revolutionise existing industries as well as to create new ones. Smart materials for example change their properties, their structure or composition, or their functions, and are mostly embedded in systems whose inherent properties can be favourably changed to meet performance needs.</p> <p>New ways of processing/forming or coating for an existing material will also enhance its characteristics, which can provide radical and major opportunities for existing and new manufacturing activities.</p> <p>New materials usually require the introduction of new manufacturing processes, skills, mensuration and quality assurance procedures, which in turn often require extensive investment in equipment and knowledge.</p>	<p>Complex manufacturing</p> <p>Medical Devices, pharma/bio engineering, food, packaging....</p> <p>Irish Centre for Composites Research</p> <p>Advanced Materials and Bioengineering Research Centre</p>
eHealth (telehealth)	<p>Europe at national as well as cross-border level is facing challenges such as ageing societies, chronic disease management, patient and professional mobility, and health professional shortages, that eHealth could help to improve. E-health provides a new method for using health resources- such as information, money and medicines, and is a recognised tool in enhancing the modernisation of national healthcare systems. The EU e-health sector includes large companies, but is particularly characterised by a very large number of SMEs.</p> <p>The development of connected health technologies requires a cross disciplinary approach involving many research disciplines and sectors. Enterprise Ireland proactively engages with clients across life sciences, software, and international services, and the research community in exploring opportunities in this end-market.</p>	<p>Advanced manufacturing in medical technologies</p> <p>Embedded software systems</p> <p>Wireless communications</p> <p>ICT/data analytics/Software</p> <p>Healthcare services</p> <p>Research infrastructures</p>

New area of opportunity	Brief synopsis	Building on existing capabilities
e-tailing	<p>E-tailing is still in expansion mode and is a wide and open market where small, innovative companies can gain traction very quickly. Established makers of consumer products may take advantage of the e-tailing platform to tap into new markets. Some will engage with online virtual marketplaces such as e-Bay or Amazon tapping into huge aggregated traffic flows, while others will adopt their own online storefronts. The traditional 'bricks and mortar' retailer is adapting to the online channel and having to adjust business models and supply chain configurations. There are related developments and opportunities around secure e-payments, data analytics, digital marketing and logistics.</p> <p>E-tailing is having a significant impact in emerging economies, with China leading the way. China's broadband penetration is still only 30 percent but in 2011 it surpassed online sales in Japan, the UK and Germany.</p> <p>The growth of e-tailing poses challenges for town and city development and planning where the need for physical storefronts give way to increased demand for warehousing and other logistics.</p>	<p>ICT Internet technologies</p> <p>ICTs payments and security</p> <p>Retail</p> <p>Transport and logistics</p>
Fintech	<p>Identified in the IFS 2020 as an emerging area of potential for both Irish owned and foreign owned enterprises. Fintech involves the application of technological innovation to transform the financial services sector. The next generation of financial services business models, products and services is being shaped by the increasing significance of data and analytics, security and risk management, digitisation, enterprise mobility, ePayments and enhanced customer experience.</p> <p>Actions to realise the potential will be progressed through the IFS2020 implementation process.</p>	<p>Financial services</p> <p>Software engineering and technologies</p>
Geosciences	<p>Geosciences underpin the discovery of raw materials, water and energy resources critical to the world economy, within a context of increasing demand and diminishing supply. Ireland has many such resources, including Europe's largest zinc mine, untapped hydrocarbon resources in challenging North East Atlantic deep water environments, and a diverse geological framework with important seabed and groundwater resources, along with a range of competencies in this field.</p> <p>DJEI through Science Foundation Ireland helps fund the Irish Centre for Research in Applied Geosciences (iCRAG), which carries out research to find and harness these resources in an environmentally sustainable way. The Centre's aim is to transform geoscience research in Ireland, and help deliver economic impact for a broad range of application areas and industries, applicable in Ireland and overseas.</p>	<p>Internet &amp; mobile technologies</p> <p>ICT/data analytics/Software</p> <p>Applied geosciences capabilities and research</p> <p>Mining</p> <p>Oil &amp; Gas Exploration</p>

New area of opportunity	Brief synopsis	Building on existing capabilities
Internet of things	<p>The Internet of Things can be described as the intersection between the 'virtual' (internet) world and our physical world, via 'things' or devices. These connected devices are enriching our daily lives, in everything from entertainment and home, to energy, transport, healthcare and diet.</p> <p>The Internet of Things is already delivering real benefits in almost every area. Remote sensors and monitoring devices are being developed that can help us with our fitness, health, energy management, diet and travel. They could help medics to remotely monitor intravenous drug delivery and test for diseases through 'smart' tattoos on the skin and help car manufacturers to create sensors that monitor and report on air quality within the car.</p> <p>There is a huge opportunity in the Internet of Things for Ireland. It's predicted that between now and 2020, half of the business opportunities within the Internet of Things will be attributed to start-up businesses.</p>	<p>ICT mobile &amp; sensor technologies &amp; Internet</p> <p>Impacting....</p> <p>Medical devices; Agriculture; Healthcare and wellness; Transport and logistics; Energy management; Construction and 'smart' buildings</p>
Sharing Economy	<p>The sharing economy can be defined as online platforms that help people share access to assets, resources, time and skills. To date the sharing economy has been primarily dominated by peer-to-peer marketplaces (e.g. making your home available to others for holidays, couch surfing etc.) although it is a growing phenomenon within the B2B sector. It is likely that the sharing economy will present considerable disruption to already established markets and/or provide opportunities for traditional business to extend their business models. Examples include Airbnb, City Car Clug, Hailo Taxis.</p> <p>Given that the sharing economy is based on online platforms, there is also likely potential in terms of the development and/or management of such platforms and aspects such as personal verification, e-money, innovation in business models, data analytics, customer engagement and behavioural analysis etc., presenting opportunities for Ireland to attract investment and/or to stimulate entrepreneurship and start-ups that can quickly scale.</p> <p>Broader policy issues arise that relate to e.g. regulation, insurance, output measures etc. Further analysis is required to better understand the implications for existing and potential enterprise in Ireland.</p>	<p>ICT internet technologies</p> <p>ICT mobile technologies</p> <p>Regulatory environment</p> <p>Impacting...</p> <p>Hospitality,</p> <p>Transport</p> <p>Retail</p> <p>...likely others over time</p>

<p>Smart Ageing</p>	<p>‘Smart ageing’ is the intersection between the needs of older people and solutions offered by new technology and innovation that supports active and healthy ageing. Global and domestic demographic changes weighted towards the older age cohort, the increased incidence of chronic diseases and disability, shift from hospital to patient centric care in the community, and increasing consumer wealth, are leading to increased demand for products and services catering specifically for older people. There is also a growing emphasis on the health and lifestyle market, focused on early diagnoses, prevention, and independent living. The EU’s Horizon 2020 identified health, demographic change and well-being care as a grand challenge.</p> <p>Solutions and applications include health monitoring and diagnostic technologies, health informatics; self-care and diagnosis, telecare, connected health; food for health; assistive and remote technologies, both mechanical and electronic systems; and smart homes featuring sensor technologies, safety and security systems.</p> <p>There is potential to build Ireland as a preferred location for international companies seeking to research, develop and trial new approaches to addressing the challenges and opportunities for an ageing population, and optimise the commercial exploitation of scientific breakthroughs emanating from research centres and businesses in Ireland.</p>	<p>Medical Devices                  ICT mobile communications                  ICT sensor technologies                  Internet technologies                  ICT/data analytics/Software                  Business services                  Healthcare services                  Functional foods</p>
<p>Space</p>	<p>Ireland has developed a thriving space industry and research community in recent years, with a growing number of Irish companies developing products and services for the European Space Programme, courtesy of Ireland’s membership of the European Space Agency (ESA), and that can be made available on the global market. Ireland’s membership of the ESA has allowed Irish industry to develop highly advanced technologies with extremely high levels of performance and reliability required for space systems. Irish companies have demonstrated an ability to bring innovative technologies to the commercial space market, which in many cases have been developed in collaboration with Irish universities and research institutes. They have also shown a strong capacity to adapt space technologies for non-space markets such as aerospace, biomedical and telecommunications.</p> <p>Irish space companies cover a wide range of technology areas including: spacecraft avionics, electronic components, software for spacecraft control and human spaceflight, advanced materials and structures for satellites and launch vehicles, space propulsion, optoelectronic devices for satellites, and biomedical instruments for human spaceflight.</p>	<p>Advanced materials and processes                  Life and physical sciences                  Optics/optoelectronics                  Ground station systems and networks                  On board data systems                  Space systems software</p>

## Appendix IX

Table A9.1 Sector Economic Contribution Table (see note overleaf)\*

Sector Categorisation		Empl. 2014 ('000s)	% Change 09-14	Exports 2014 € billion	% Change 09-14
Building on Strengths	ICT	77.2	21.0	46.8	50.8
	Pharma/Bio (includes chemicals)	34.7	14.1	51.6	4.6
	Medical Technologies	26.4 <sup>574</sup>	12.4	8.7 <sup>575</sup>	36.9
	Int'l Financial Services	35.0 <sup>576</sup>	16.7	17.9	36.7
	Agri-Food	54.0	9.8	9.3	43.0
	Int'l Trading Business Services	23.9 <sup>577</sup>	11.4	28.9	25.9
	Engineering	31.9	-4.8	5.4	-12.1
	<b>Sub Total</b>	<b>283.1</b>	<b>-</b>	<b>168.6</b>	<b>-</b>
A renewed Focus on Mature Sectors	Tourism & Hospitality	147.6	7.6	3.7	4.1
	Retail & Wholesale	276.7	0.9	n/a	n/a
	Construction	150.7 <sup>578</sup>	-9.7	0.3	60.0
	Transport, Logistics & Distribution	88.3 <sup>579</sup>	-4.7	4.5	47.8
	Other Manufacturing & Sub Supply	71.2	-14.6	10.2	23.4
	Agriculture- excluding fishing	104.3	19.6	0.7	31.7
	Domestic Financial Services	55.0	-19.6		
	<b>Sub Total</b>	<b>893.8</b>	<b>-</b>	<b>19.4</b>	<b>-</b>
Emerging Opportunities & Untapped Potential	Green Enterprise	9.1 <sup>580</sup>	40.0	2.8	n/a
	Creative Industries	26.0	2.4	n/a	n/a
	Marine/Maritime	5.7 <sup>581</sup>	14.0	0.5	62.7
	Private Healthcare Services	130 <sup>582</sup>	31.6	n/a	n/a
	Private Education Services	42.5 <sup>583</sup>	20.4	n/a	n/a
	<b>Sub Total</b>	<b>213.3</b>		<b>3.3</b>	<b>-</b>
	Other – excluding utilities	187.2 <sup>584</sup>	1.8	16.5	-
	Utilities	36.4	-18.2		
	Public Sector	325.1	-9.0	n/a	-
	<b>Grand Total</b>	<b>1938.9</b>	<b>0.9</b>	<b>207.8</b>	<b>37.0</b>

574 Annual Employment Survey 2014, DJEI

575 DJEI ABSEI 2013, 'Medical Device Manufacturing'. – 2013 used as a proxy for 2014

576 A Strategy for Ireland's International Financial Services sector 2015-2020

577 Annual Employment Survey 2014, DJEI

578 Includes civil engineering, specialised construction activities, architectural and engineering activities; technical testing and analysis

579 Excludes water transport which is captured in Marine/Maritime

580 Based on Report of High Level Group on Green Enterprise 2009

581 Comprises fishing and aquaculture and water transport

582 Based on total healthcare employment in the State less public sector health employment

583 Based on total education employment less public sector education

584 Includes other manufacturing and primary production and other services (primarily locally traded)

## Note re sector economic contribution (Table A9.1)

Economy-wide sectoral enterprise data comes from a variety of 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 mix within the confines of existing database classification systems. As such the table above provides an indicative cross-sectoral view and data sources are contained in the footnotes as appropriate. All data is sourced from CSO unless otherwise stated in the footnotes – 'n/a' = not available.

## Appendix X

### Summary of State Aids

Aid Guideline	Brief overview
<b>Regional Aid Guidelines (RAGs)</b>	Capital/employment grants aimed at building capacity (employment) and redressing regional disparities. Grant intensities are determined by scale of company (globally) and by regional location. The evaluations span to RAGs time-frames. Under the Guidelines pertaining during the evaluation periods grant intensities range from between 0 percent and 35 percent toward eligible expenditures
<b>General Block Exemption Regulation (GBER)</b>	Allows Member States to grant such aid without first notifying the Commission. The GBER includes areas such as SMEs (investment and employment aid, consultancy aid, aid for SME participation in fairs), aid in the form of risk capital and aid for promoting female entrepreneurship), research, innovation, regional development, training, employment
<b>DeMinimus Aid</b>	Small amounts of aid provided to one company (up to a limit of no more than €200,000 in any 3 year period) are outside the terms of State Aid
<b>Research, Development and Innovation</b>	Aid for research and development projects, research infrastructure, innovation clusters, innovation aid for SMEs, process and organisational innovation, R&D in the fishery and aquaculture sector. Subject to certain limits governed by the EU RD&I Guidelines. Grant intensities are determined by the nature of R&D being undertaken as well as scale of the global entity
<b>Training</b>	To improve the strategic capability and competitiveness of enterprises in Ireland through the training of employees. Intensities are determined by nature of the training whether specific (to the firm/employment) or general (transferable)
<b>Environmental</b>	Incentivise and accelerate investment in initiatives that will encourage undertakings to comply with new Union standards for environmental protection; to improve energy efficiency; to promote the uptake of energy from renewable sources and to encourage the carrying out of environmental studies. The aid intensity up to 40% of the eligible costs and may be increased by 10% for medium sized undertakings and 20% for small undertakings and by 5% for investments located in assisted areas as outlined in Ireland's Regional Aid Map 2014 - 2020

Source: DJEI State Aid Schemes<sup>585</sup>

Note: Under these State aid rules, DJEI operates 5 State Aid Schemes which are administered by the enterprise development agencies: Regional Aid, Research Development and Innovation; Training Support; SME and Start-Up and the Environmental Aid Scheme. Within these Schemes, a number of different programmes and grant offerings are developed and delivered by the enterprise development agencies.

585 See <http://www.djei.ie/enterprise/stateaid/schemes.htm> for further detail

## Appendix XI

### Summary of Business Cost Trends in Ireland (NCC 2015)

<p><b>Labour Costs</b></p>	<p>Expected that upward wage pressures will increase as labour market tightens.</p> <p>Following a number of years of marginal decline, Irish labour costs are on the increase (2.2 percent in 2012, 0.7 percent in 2013, one percent in the first two quarters of 2014) but less than the euro area average. Strong increases in manufacturing, the financial and ICT sectors in the last year.</p> <p>Irish unit labour costs up one percent in 2013 after several years of improvements but are improving relative to euro area, therefore a slight improvement in Irish competitiveness which is expected to continue in 2015 and 2016.</p> <p>Ireland's minimum wage is the 4th highest in the euro area (measured in euro terms), and 9th highest when expressed as a percentage of average gross monthly earnings.</p> <p>The cumulative impact of increases in income taxes, changes to bands, introduction of the USC etc. have weakened competitiveness since the onset of recession.</p>
<p><b>Property Costs</b></p>	<p>After several years of cost reductions (construction and rental) the commercial market increasing in both capital values and rents in all sectors (up 31.4 percent in the year) but esp. retail. Property costs are a threat to sustained competitiveness.</p> <p>Shortage of prime offices could result in future rent increases and impact the attraction of FDI.</p> <p>Rising house prices drive up wage expectations, and has impact on competitiveness.</p> <p>Hotel accommodation cost rising, esp. Dublin, affects competitiveness of tourism.</p> <p>Commercial rates sig. variation across local authority areas and increasing as a source of revenue for LAs as funding from Central Government is reduced.</p>
<p><b>Transport Costs</b></p>	<p>Stability generally, except increase in air transport prices (12.4 percent) in the past year</p> <p>Diesel prices, a significant cost for haulage, are 5.5 percent higher in Ireland than in the euro area.</p> <p>While it is more expensive to export from Ireland, Irish administrative processes are efficient and compare favourably with processes in our key competitors.</p> <p>Continuation of weak euro could have an adverse impact on petrol and diesel prices (although crude oil prices are currently low, crude is priced in US dollars)</p>
<p><b>Utility Costs</b></p>	<p>Energy costs in Ireland are expensive compared to most of EU. Ireland is the 6th most expensive Euro location for both SMEs and large electricity users. US gas prices much lower than EU.</p> <p>Irish landfill costs among the most expensive vis benchmarked countries. Up from €93 per tonne in 2010 to €113 in 2014 (landfill levy). Thermal treatment (gate fees) also among most expensive.</p> <p>Water/waste water costs for enterprise compare well to competitor markets. Development of a new business pricing framework in Irish Water has led to a degree of uncertainty on</p>



	<p>future costs. Need for investment in water infrastructure, allied to the cost of meeting environmental targets, could result in increases in prices - depending on efficiency gains arising.</p> <p>Telecoms relatively competitive - concerns persist re the quality (speed) of services available. For enterprise, availability is more of a concern than cost issues.</p>
<b>Credit Costs</b>	<p>New business interest rates for non-financial corporations are higher in Ireland than in the euro area – rates are 60 percent higher for loans up to €1m and are 81 percent higher for loans above €1m.</p> <p>In Nov 2014, interest rates for revolving loans &amp; overdrafts were 42 percent above euro area average.</p>
<b>Business Services and Other Input Costs</b>	<p>Over 2012 to 2014, prices for a range of business services (e.g. transport, postal and courier, and computer consultancy services) increasing in Ireland following declines during recession.</p> <p>Legal service costs have fallen recently after a long period of price stickiness. Ireland, however, remains an expensive location to enforce a business contract.</p> <p>In Q3 2014, prices for a basket of business services were 6.5 percent above 2010 levels. Overall, since 2010, service prices have risen by more than manufacturing prices.</p>
<b>Broader Cost Environment</b>	<p>Ireland’s current price level and inflation profile is high cost but rising slowly. In 2013, Ireland was the 3rd most expensive in euro area (consumer goods and services) and 16.8 per cent above euro area average generally (above the euro area average in 10 of the 12 categories)</p> <p>Principal contributors to inflation over last 12 months: “Miscellaneous goods and services”, esp. health insurance; “Alcohol and tobacco”; “Education” and “Restaurants and Hotels”. House prices and rents going up again may have significant consequences for affordability and wages.</p>

Source: Costs of doing business in Ireland 2015, National Competitiveness Council, April 2015

## Appendix XII

### Small Advanced Economies Initiative

The Small Advanced Economies Initiative (SAEI), established in 2012, is a collaboration between Denmark, Finland, Ireland, Israel, New Zealand and Singapore. The SAEI brings together officials and experts from its member countries to consider policy issues of common interest where the perspective of being a small advanced economy influences policy choices. The initiative operates under three broad streams: economic policy, science and innovation and foreign affairs.

All member countries of the initiative are advanced economies by International Monetary Fund standards, and are of similar scale in terms of population<sup>586</sup>. Members also exhibit relatively similar characteristics in terms of GDP per capita<sup>587</sup>. GDP growth rates in 2014 were relatively strong for the majority of members of the initiative<sup>588</sup>.

An important aspect of the SAEI initiative is the discussion and learning that can take place between fellow members on potential policy responses to challenges faced by members as a result of being an SAE. With regard to the economic policy stream of the initiative, a characteristic generally shared by small advanced economies is that they are prone to higher levels of economic volatility than larger economies. Small country growth is increasingly correlated to global GDP growth. This reflects the relatively high levels of international economic exposure that small countries face. As can be seen in (Figure A12.1), exports of goods and services as a percentage of GDP is relatively high in SAEI countries when juxtaposed to the major economies of China and the United States. For example, while Ireland exports 105 percent of its GDP, the United States and China export 13 percent and 26 percent, respectively.

Additional to the high rate of exports and imports often seen in small countries<sup>589</sup>, there are also structural drivers for the high level of economic volatility and potential risk. Small countries tend to have more concentrated export product portfolios<sup>590</sup>, a more concentrated set of export markets<sup>591</sup> and to rely heavily on a relatively small number of large firms. Therefore, the SAEI concerns itself with potential policy responses to the economic risk and resilience question. For example, shaping the portfolio of economic risk exposures, building buffers and creating an

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586 The population of member countries in 2014 ranges from 4.5 million in New Zealand to 8.2 million Israel, while GDP in 2014 (current prices) ranges from \$198.1 billion in New Zealand to \$340.8 billion in Denmark (source: IMF 2015)

587 GDP per capita in 2014 (current prices) ranges from \$36,991 in Israel to \$60,564 in Denmark (source: IMF 2015)

588 Ireland experienced the strongest growth of 4.8 percent in 2014. Israel, New, Zealand and Singapore experienced approximately 3 percent growth, while Denmark exhibited 1 percent growth and Finland, experienced a negative growth rate of -0.1. Over the next five years IMF forecasts predict a convergence of GDP growth rates between SAEI members

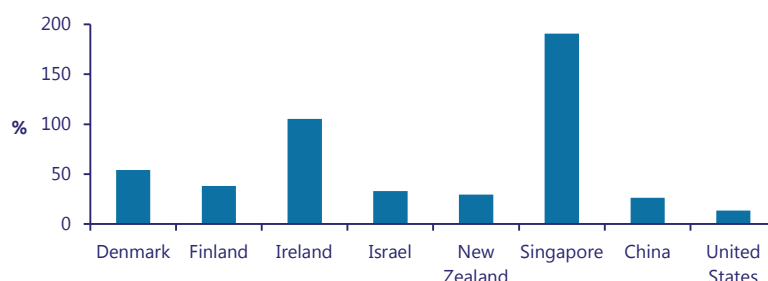
589 SAEI countries also have a higher rate of imports of goods and services as a percentage of GDP when compared to the United States and China. The United States and China's rate in 2013 was 17 and 24 percent respectively, while Singapore's and Ireland's was 168 and 84 percent respectively (UN, 2015)

590 In the case of Ireland, three sectors – chemicals, computer services and business services accounted for 66 percent of total exports in 2013, with chemicals accounting for 29 percent of total exports (CSO)

591 In the case of Ireland, in 2013, 64.2 percent of all agency assisted exports went to the Europe (including UK) (ABSEI)

efficient allocation of risk within the economy, as well as ensuring that the economy can respond flexibly and quickly when it is hit by shocks.

**Figure A12.1 Exports of Goods and Services 2013 (as a % of GDP)**



Source: The World Bank, World Development Indicators (available at <http://data.un.org>)

In relation to the Science and innovation stream, while there is a diverse range of challenges being faced within the group and a broad range of policy strategies being pursued, there are common themes of concern evident across the group<sup>592</sup>. These include, the mismatch between the supply of graduates and the needs of industry; a greater focus on the framework conditions required for innovation and R&D; and the use of research activity to facilitate regional development. The changing nature of small country science systems as a result of both internal and external pressure, the respective roles of universities and public research organisations and the management of the future pipeline of skilled human scientific resource are also examples of issues that concern members of the SAEI<sup>593</sup>.

The foreign policy stream explores areas such as strategic issues confronting the SAEs; the notion of 21<sup>st</sup> century diplomacy, science and diplomacy; SAEs and international organisations; and the National Branding/Soft Power for SAEs. In relation to SAEs and international Organisations, members of the initiative already work together formally and informally in a range of international organisations such as the UN, WTO and the OECD. In particular, the OECD has been a useful forum where the SAEI<sup>594</sup> have already been working together, particularly on science and innovation. However, similar opportunities may lie elsewhere, for example with regard to economic policy and the SAEI aims to explore these options. It has been recognised that possible coordination among members in relation to specific fora and issues might be a useful addition to the 'diplomatic tool box' of members.

For Ireland, the SAEI presents an opportunity to explore policy insights and learnings with countries that face similar challenges and risks to ourselves. It will also be useful to benchmark and observe trends in enterprise and economic performance with these countries with similar characteristics over time.

<sup>592</sup> These themes of concern were evident when the SAEI met in Jerusalem May 2015 (the most recent meeting at the time of writing)

<sup>593</sup> The group has already completed an analysis of impact of public research programmes: Broadening the Scope of Impact - defining, assessing and measuring impact of major public research programmes, with lessons from 6 small advanced economies - [http://www.smalladvancedeconomies.org/wp-content/uploads/SAEI\\_Impact-Framework\\_Feb\\_2015\\_Issue2.pdf](http://www.smalladvancedeconomies.org/wp-content/uploads/SAEI_Impact-Framework_Feb_2015_Issue2.pdf).

<sup>594</sup> Minus Singapore which is not a member of the OECD

## Appendix XIII

### A note on process

The development of this Strategy was led by the Management Board in DJEI (MAC), under the chairmanship of the Secretary General, John Murphy.

Research, analysis and drafting of the Strategy was undertaken by the Strategic Policy Division in DJEI with a project team comprising: Maria Ginnity, Céline McHugh, Andrew Colgan, Maurice Dagg, Alan Power, and Tiago McCarthy.

The MAC and project team were supported by an Enterprise 2025 Working Group, chaired by Declan Hughes, Assistant Secretary, Strategic Policy Division, with membership drawn from the Divisions in DJEI and across the enterprise agencies including IDA Ireland, Enterprise Ireland, Science Foundation Ireland, and the Local Enterprise Offices.

#### Consultations

The project team consulted with a broad range of stakeholders including business representative organisations and their members (including Ibec, Small Firms Association, ISME, American Chamber of Commerce); representatives from other Government Departments and Agencies; and researchers at the OECD. The project team is particularly appreciative of stakeholder participation at a number of themed workshops on sector ecosystem development and clustering, future ways of working and global trends.

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## List of Abbreviations

ABSEI	Annual Business Survey of Economic Impact
AES	Annual Employment Survey
AI	Artificial Intelligence
APJ	Action Plan for Jobs
ASEAN	Association of South East Asian Nations
B2B	Business to Business
B2C	Business to Consumer
BERD	Business Enterprise Research and Development
BES	Business Expansion Scheme
BIC	Business Innovation Centre
BIS	Bank of International Settlements
BIT	Bilateral Investment Treaty
BRICs	Brazil, Russia, India, China and South Africa
CAP	Common Agricultural Policy
CAR	Compound Annual Rate
CBA	Cost Benefit Analysis
CBI	Central Bank of Ireland
CCP	Common Commercial Policy
CCPC	Competition and Consumer Protection Commission
CEB	County Enterprise Board
CER	Commission for Energy Regulation
CGT	Capital Gains Tax
CETA	Comprehensive Economic and Trade Agreement
CJEU	Court of Justice of the European Union
COMREG	Commission for Communications Regulation
COSME	Competitiveness of Enterprises and Small and Medium Sized Enterprises
CPD	Continuous Professional Development
CRO	Companies Registration Office
CSET	Centre for Science, Engineering and Technology
CSO	Central Statistics Office
CSR	Corporate Social Responsibility

CV	Corporate Venturing
DAHG	Department of Arts, Heritage and the Gaeltacht
DAFM	Department of Agriculture, Food and the Marine
DCENR	Department of Communications, Energy and Natural Resources
DECLG	Department of Environment, Community and Local Government
DEIS	Delivering Equality of Opportunity in Schools
DES	Department of Education and Skills
DFAT	Department of Foreign Affairs and Trade
DoF	Department of Finance
DJEI	Department of Jobs, Enterprise and Innovation
DJE	Department of Justice and Equality
DMI	Design Management Institute
DPC	Data Protection Commissioner
DPER	Department of Public Expenditure and Reform
DSM	Digital Single Market
DSP	Department of Social Protection
DoT	Department of Taoiseach
DTTAS	Department of Transport, Tourism and Sport
DVA	Domestic Value Added
EAT	Employment Appeals Tribunal
EC	European Commission
ECB	European Central Bank
EDT	Ecosystem Development Team
EEA	European Economic Area
EFTA	European Free Trade Association
EGA	Environmental Goods Agreement
EGFSN	Expert Group on Future Skills Needs
EI	Enterprise Ireland
EIB	European Investment Bank
EIF	European Investment Fund
EII	Employment and Investment Incentive
EP2025	Enterprise Policy 2025
EPA	Environmental Protection Agency
ESB	Electricity Supply Board

EFSI	European Fund for Strategic Investment
ELTF	European Long Term Investment Funds
ESRI	Economic and Social Research Institute
ETB	Education and Training Board
ETC	Export Trade Council
EU	European Union
EV	Electric Vehicle
FDI	Foreign Direct Investment
FET	Further Education and Training
FP7	Seventh Framework Programme for Research and Technological Development
FTA	Free Trade Agreement
FTE	Full Time Equivalent
G7	Group of 7 most powerful industrialised Nations
GATS	General Agreement on Trade in Services
GBAORD	Government Budget Appropriation and Outlays on Research and Development
GBER	General Block Exemption Regulation
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
GERD	Gross Expenditure on Research and Development
GIRDF	Global Enterprise Research and Development Co-operation Framework
GNI	Gross National Income
GNP	Gross National Product
GPN	Global Production Network
GVA	Gross Value Added
GVC	Global Value Chain
GVN	Global Value Network
H2020	Horizon 2020, The EU Framework Programme for Research and Innovation
HE	Higher Education
HEA	Higher Education Authority
HERD	Higher Education Expenditure on Research and Development
HEI	Higher Education Institution
HGF	High Growth Firm
HPSU	High Potential Start-up
HR	Human Resources

HSA	Health and Safety Authority
IAASA	Irish Accountancy and Auditing Supervisory Authority
IBEC	Irish Business and Employers' Confederation
ICT	Information and Communications Technology
IDA Ireland	Industrial Development Agency Ireland
IDC	Interdepartmental Committee
ID2015	Irish Design 2015
IDF	Invention Disclosure Form
IFI	Innovation Fund Ireland
IFS	International Financial Services
IICM	Irish Institute of Credit Management
IKED	International organisation for Knowledge, Economy & Enterprise Development
IMDA	Irish Medical Devices Association
IMERC	Irish Maritime and Energy Research Cluster
IMF	International Monetary Fund
IMI	Irish Management Institute
INIS	Irish Naturalisation and Immigration Service
INSEAD	Institut privé d'enseignement supérieur
IoT	Internet of Things
IPR	Intellectual Property Regime/Rights
IP	Intellectual Property
IPA	Investment Promotion Agency
IPE	Investment Plan for Europe
IPO	Initial Public Offering
IRC	Irish Research Council
ISBP	Innovation in Services and Business Processes
ISE	Irish Stock Exchange
ISIF	Irish Strategic Investment Fund
ISME	Irish Small and Medium Enterprises Association
IT	Institute of Technology
ITI	InterTradeIreland
IUA	Irish Universities Association
JV	Joint Venture
KET	Key Enabling Technology



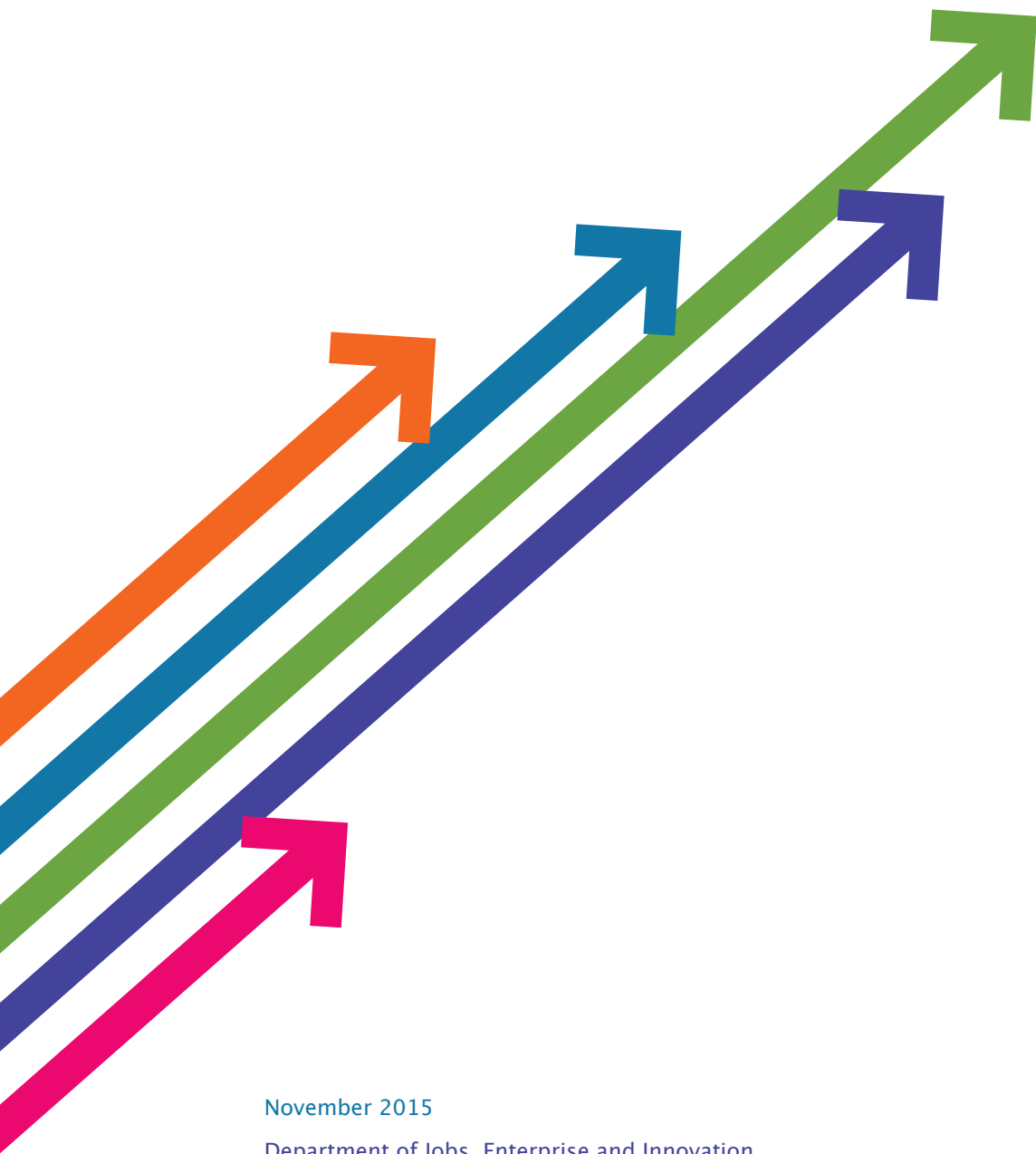
KfW	Kreditanstalt für Wiederaufbau
KPI	Key Performance Indicators
KTI	Knowledge Transfer Ireland
LA	Local Authority
LEOs	Local Enterprise Offices
LMP	Local Market Plan
LOA	Licenses, Options and Assignments
LRC	Labour Relations Commission
LTU	Long term unemployed
M&A	Mergers and Acquisitions
MBO	Management Buy Out
MDC	Management Development Council
MFI	Microfinance Fund Ireland
MNCs	Multinational Corporations
MOOC	Massive Open Online Course
MS	European Union Member State
MTES	Medium Term Economic Strategy
NACE	Nomenclature generale des Activites economiques dans les Communautes Europeennes
NCC	National Competitiveness Council
NDP	National Development Plan
NDS	National Digital Strategy
NERA	National Employment Rights Authority
NERI	Nevin Economic Research Institute
NESC	National Economic and Social Council
NewERA	New Economy and Recovery Authority
NFC	Non-financial corporation
NFQ	National Framework of Qualifications
NIBRT	National Institute for Bioprocessing Research and Training
NIS	National Innovation System
NPF	National Planning Framework
NPRF	National Pensions Reserve Fund
NRA	National Roads Authority
NSAI	National Standards Authority of Ireland

NSS	National Skills Strategy or National Spatial Strategy
NUTS	Nomenclature d'unités territoriales statistiques
ODI	Outward/Overseas Direct Investment
ODCE	Office of the Director for Corporate Enforcement
OECD	Organisation for Economic Co-operation and Development
OGP	Office of Government Procurement
PAYE	Pay as You Earn
PCP	Public Capital Programme
PIYRA	President's Young Researcher Award
PPP	Purchasing Power Parity
PRO	Public Research Organisation
PRSI	Pay Related Social Insurance
PRTL	Programme for Research in Third Level Institutions
PTW	Pathways to Work
QE	Quantitative Easing
QNHS	Quarterly National Household Survey
QQI	Quality and Qualifications Ireland
RAG	Regional Aid Guidelines
RCEP	Regional Comprehensive Economic Partnership
RDI	Research, Development and Innovation
R&D	Research and Development
RD&I	Research, development and innovation
REA	Registered Employment Agreement
RIA	Regulatory Impact Analysis
RPG	Regional Planning Guidelines
RPL	Recognition of Prior Learning
RPO	Research Performing Organisations
RSES	Regional Spatial and Economic Strategies
RTA	Regional Trade Agreement
RTI	Research, Technology and Innovation
RTO	Research and Technology Organisation
SAE	Small Advanced Economy
SAEI	Small Advanced Economies Initiative
SAM	State Aid Modernisation

SARP	Special Assignee Relief Programme
SBCI	Strategic Banking Corporation of Ireland
SBIR	Small Business Innovation Research
SCM	Supply Chain Management
SCS	Seed Capital Scheme
SDO	Standard Development Organisation
SEAI	Sustainable Energy Authority of Ireland
SFI	Science Foundation Ireland
SIRG	Starting Investigator Research Grant
SLMRU	Skills and Labour Market Unit
SME	Small and Medium Enterprise
SOLAS	An tSeirbhís Oideachais Leanúnaigh agus Scileanna
SPD	Strategic Policy Division, Department of Jobs, Enterprise and Innovation
STI	Science, Technology and Innovation
SSTI	Strategy on Science, Technology and Innovation
STEM	Science, Technology, Engineering, Mathematics
SURE	Start-up Refunds for Entrepreneurs Scheme
TFEU	Treaty on the Functioning of the European Union
TiSA	Trade in Services Agreement
TiVA	Trade in Value Added
TNCs	Transnational Corporations
TRL	Technology Readiness Level
TSSG	Telecommunications Software and Systems Group
TTIS	Trade, Tourism and Investment Strategy
TTIP	Transatlantic Trade and Investment Partnership
TTO	Technology Transfer Office
TTSI	Transfer Technology Strengthening Initiative
ULC	United Labour Cost
UNCTAD	United Nations Conference on Trade and Development
UNWTO	United Nations World Tourism Organisation
USC	Universal Social Charge
VC	Venture Capital
WEF	World Economic Forum
WTO	World Trade Organisation







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