

REGIONAL COMPETITIVENESS AGENDA

Volume II - Realising Potential

West

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1. Background & Context

Ireland is facing unprecedented challenges against the backdrop of a world recession, and is now operating within tough budgetary conditions and fiscal constraints. We have already seen the impacts in terms of a decline in economic activity and increases in unemployment. The more recent downturn in employment is particularly marked in both the construction and manufacturing sectors and has greater implications for the regions outside of the Greater Dublin Area (GDA) in the medium term.

The Government's 'Building the Smart Economy' document identifies the fundamental importance of returning to export-led growth. Returning to export-led growth requires that we create an environment that is conducive to attracting foreign direct investment (FDI), stimulating entrepreneurship and enabling companies to grow and serve global markets from an Irish base.

In this context, Forfás, together with the development agencies, has developed a suite of **Regional Competitiveness Agendas (RCAs)** for each of the regions at NUTS III Level¹. The RCAs take an enterprise perspective, recognising that enterprise is a key driver for regional growth and national economic development. The document does not seek to suggest how immediate term issues might be addressed as these are being addressed through other channels². It takes a longer term view, recognising that at the same time, it is vital that we prioritise and make strategic investments now that pump-prime the potential of each of the regions to position them as contributors to Ireland's national growth when this downward economic cycle comes to an end.

This report should be read in conjunction with:

Regional Competitiveness Agenda: Volume I : Baseline Data and Analysis : West Region which provides an overview of the region today based on an analysis of quantitative and qualitative indicators across a range of competitiveness factors; and

A final report: *Regional Competitiveness Agendas: Overview, Findings and Actions*. This report highlights findings arising from our analysis of all regions, differentiating factors for the regions, and priorities for regional enterprise development.

¹ East (Mid-East & Dublin), Border, Midlands, West, Mid-West, South-West, South-East

² Refer to National Competitiveness Council's Annual Competitiveness Report 2009 (<http://www.competitiveness.ie>)

The Objective of the RCAs is to.

Provide an economic overview to inform the updates of the Regional Planning Guidelines and specifically to:

- Highlight opportunities to build on each region's distinctive strengths
- Identify barriers to achieving objectives and/or issues specific to the region together with actions to address them
- Identify infrastructure priorities relevant to future enterprise needs within the regions.

The RCAs take a broader interpretation of infrastructures to include 'softer' factors such as innovative capacity, leadership and quality of life factors.

Methodology

Desk-based research and one-to-one consultations with a range of stakeholders were undertaken to outline the current status of the region and highlight opportunities and challenges specific to it. A regionally based workshop was held to identify the areas where the region can build from its strengths to realise its potential over the coming years. These areas are not intended to be exhaustive, but provide indications of what is possible, and they serve to prioritise the infrastructures and supporting activities required to build on the region's assets and to address barriers to enterprise development.

Report Structure

The report outlines:

- Global Drivers of Change that impact on enterprise needs
- The Competitiveness Factors that provided the framework for analysis
- A Summary of the Current Status of the Region - Strengths and Challenges
- Realising Future Potential - Identifying areas of opportunity:
 - Sectors and activities at firm level
 - Business environment factors
- Priority Actions.

2. Regional Competitiveness

Global Drivers of Change

It is never easy to predict how enterprise is likely to evolve over a given time, and within the context of the current economic downturn, it is even more challenging. Having said that, there are a number of global drivers that will continue to have implications for how companies will do business in the future³, and in turn, inform the needs of the business environment and factors of competitiveness.

Globalisation: The pace and extent of global competition has intensified significantly over recent years. Globalisation enables companies to reach new untapped markets. The supply chain is increasingly disaggregated so that companies tend to outsource non-core activities or to off-shore them to locations where it makes business sense. Even firms serving the domestic market are facing international competition (e.g. in retail, pharmacy, supermarkets). People are also more mobile and high-value talent is scarce relative to global demand. People can and will choose where they want to live and work. Quality of life factors take on a new dimension in this context.

Advances in Technology have a significant impact, not only on the ICT industry itself, but on almost every business, regardless of the nature of its activities. Technology advances have enabled companies to manage multi-site operations across the world. ICT has been, and will continue to be, a key enabler for the remote delivery of services. Increased convergence of technologies has seen companies from formerly discrete sectors enter into partnerships to provide end solutions to customers. Changes in business models, the convergence of formerly discrete sectors and increased mergers & acquisition (M&A) activity call for a work-force with multi-disciplinary skills and a flexible and problem-solving attitude.

Rising Concerns About the Environment: The increased focus on environmental (and energy related) issues presents opportunities for companies to innovate with alternative sources of energy, new solutions and services. Consumers will drive all companies to reconsider aspects of their business from an environmental perspective. For companies, this involves considering their own production and business processes, carbon footprint, materials and waste.

Shift Toward Services: Services contribute a higher proportion to GDP in developed economies driven by consumer demand, increased disposable incomes and a demand for 'personalised' solutions. Within the business to business (B2B) sector, companies are responding to the disaggregated supply chain model, and providing services which had been formerly managed 'in-house', including e.g. laboratory and testing services, R&D, logistics, supply chain management, and customer technical support. Manufacturing firms are 'bundling' services with their products to provide a more tailored and higher value solution to their customers. Competitively priced, high-speed resilient broadband networks and services are now a basic requirement to underpin future economic development.

The Importance of Dynamic Urban Areas: Ireland's economic structure is shifting towards a higher proportion of services exports, balanced with a core of high-value added

³ Forfás (2008) *Sharing our Future*, IBM (2008) *Drivers of Change*, Enterprise Strategy Group (2004) *Ahead of the Curve*

manufacturing activities - although this is more immediately apparent in the city of Dublin and to a lesser extent in the urban centres of Cork, Limerick, Galway and Waterford. International evidence shows that high-value added services are attracted primarily to urban areas, and that today, internationally, cities are competing with cities for enterprise investment. It also points to the fact that urban areas play a key role in driving the development of their hinterlands, and successful regions have a dynamic and vibrant city at their core. The RCAs acknowledge the importance of gateways and their role as drivers of regional economic development, and the need for strategic planning and development to optimise the inter-relationship between gateways and their immediate hinterlands.

Competitiveness Factors

The global drivers highlighted above have implications for where and how companies do business. As companies respond to these global drivers of change they make location decisions based on economic and business imperatives. Higher value activities generally depend upon an educated and skilled workforce. Locations are not only considered in terms of (relative) cost, but in terms of access to skills and talent, access to markets and customers (whether physical or virtual), an innovative capacity and capability and a dynamic environment offering an attractive quality of life - basically a good place to work, live and to do business.

In this context it is important that a location or region provides a competitive environment that stimulates entrepreneurship, enables companies to grow and evolve, and attracts and retains foreign investment. The following factors of competitiveness were developed to facilitate analysis of the regions, incorporating a suite of both quantitative and qualitative indicators⁴.

Competitiveness Factors

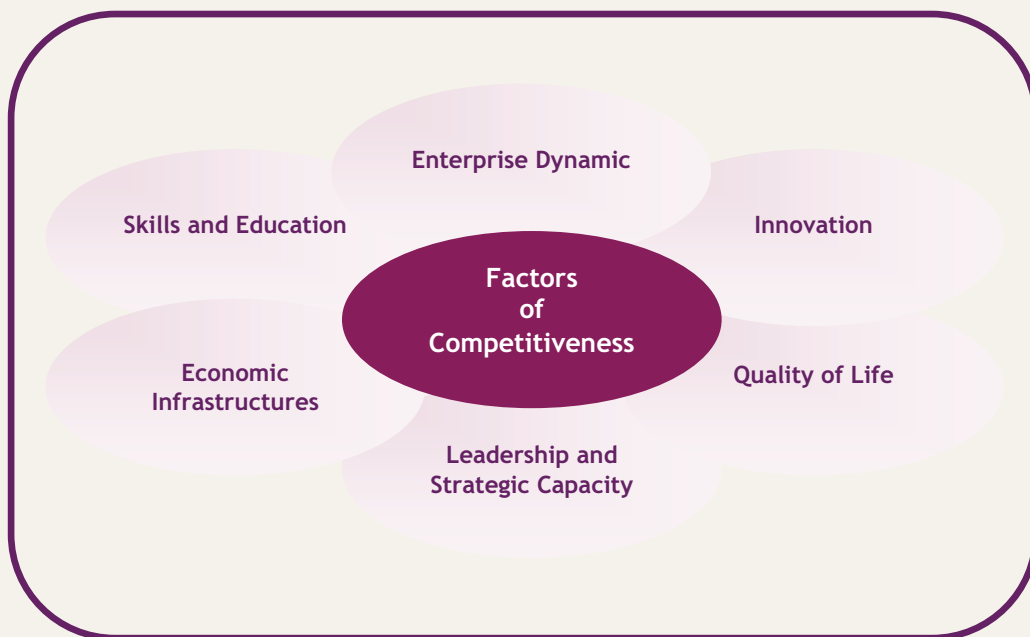
Enterprise Dynamic	assessing the enterprise structure, employment and GVA, the contribution from agency supported enterprises, and sectoral diversity and/or clustering
Skills & Education	an analysis of the skills, educational attainment and education resources
Innovation	research and development investment and activity, collaborations and inter-linkages between HEIs and firms, between firms and customers
Economic Infrastructures	transport and broadband infrastructures - recent investments and ongoing infrastructure needs
Quality of Life	based on factors relevant to the attraction of mobile investment and labour/talent
Leadership and Strategic Capacity	outlining relevant organisations and indications of locally driven initiatives and outcomes

⁴ Forfás, DOEHLG & Fitzpatrick Associates (2006) *Implementing the NSS: Gateway Investment Priorities Study*; NCC (2009) *Our Cities: Drivers of National Competitiveness*; Fitzpatrick Associates (2009) *Preparation of a Gateway Development Index (Stages 1&2)*

3. The West Region Today: A Summary

This summary is intended to highlight aspects that indicate the differentiating elements for the West region - the complete baseline analysis of the region is available separately as *Regional Competitiveness Agenda Volume I : Baseline Data and Analysis*.

Figure 1: Regional Competitiveness - Framework for Analysis



Overview - Population and Growth

The West region comprises the counties of Galway, Mayo and Roscommon and has a total population of 431,400⁵. Over the period between 2002 and 2006, the population grew by almost 9% which was marginally higher than the state average. However over the period 2006-2009 population growth slowed to one of the lowest percentage levels of increase at 4.1%. Growth within Galway city and its catchment area has been strong, with declines evident in more rural and coastal areas. Much of the growth is as a result of inward migration (Roscommon being a particular case in point).

The region is the most sparsely populated of all regions in Ireland - although this is largely because of its rugged landscape, which is an important aspect of the attractiveness of the region from a lifestyle choice perspective and for tourism development. The West also has the highest level of elderly dependency of all regions.

⁵ CSO (2009) *Population and Migration Estimates*

Regional Economic Performance

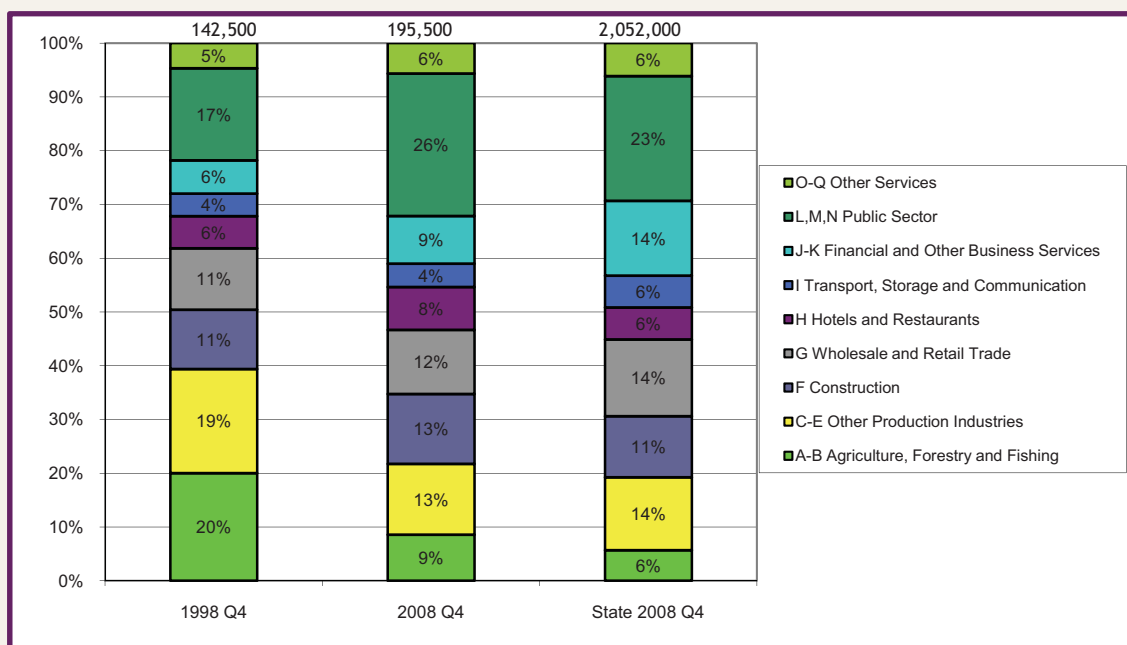
The West experienced a 37.2% growth in employment between 1998 and 2008, ahead of the national average of 35.9%. The region has a higher proportion employed in the public sector than the state average.

Within the exporting sectors, the medical devices sector is the most significant employer and has demonstrated the strongest growth over the decade since 1998. ICT services and the food sectors are key contributors, although while ICT services has almost doubled in employment numbers, the food sector has declined slightly. There is also evidence of an increasing contribution by internationally traded services activities, although in terms of employment, these services activities account for a relatively small proportion overall.

The region demonstrates a strong entrepreneurial culture with the highest proportion nationally of established entrepreneurs and early stage entrepreneurial activity.

What is also distinctive about the region is that agriculture⁶ remains a significant employer at 9%, although at the same time, has witnessed a greater contraction over the period 1998 to 2008 than that experienced nationally.

Figure 2: Distribution of Employment in the West by Sector, 1998 & 2008



Source: CSO, QNHS, Q4 1998 - Q4 2008

⁶ Primarily locally traded

Skills, Education and Innovation

The West performs well relative to national indicators in terms of educational attainment, attractiveness for highly qualified individuals and in terms of investment in R&D both within Higher Education Institutes (HEI's) and firms. It is well served by National University of Ireland, Galway (NUIG), Galway & Mayo Institute of Technology (GMIT) and the Marine Institute. A number of research centres are emerging in the region, funded through SFI, the PRTL⁷ and Teagasc focusing on areas that are relevant to the existing enterprise base, including LifeSciences, ICT (including Electronics, Informatics and Computational sciences), and Energy.

Economic Infrastructures

Transport links to and within the West have improved considerably over recent years, although intra-regional linkages remain weak. The region is well served by Shannon airport, although completion of the N18 is crucial to reduce access times. Galway regional airport and Knock airport provide scheduled connections to Dublin and UK airports. The Atlantic Corridor roadway (N17 and N18) and the planned Western Rail Corridor represent a combined North-South transport corridor for the region, which connects the gateways of the West coast, and links all three of the airports which serve the West region⁸. The development agencies have prioritised investments of specific relevance from an enterprise perspective, including the Galway City Bypass⁹.

Planned water and wastewater infrastructure projects are expected to address potential capacity deficits over the coming years¹⁰, and it is vital that funding for these projects is not impacted by current economic constraints.

Quality of Life

The West provides a diverse and distinctive environment that includes urban, coastal and rural dimensions. It is renowned for its cultural aspects that are embedded in the Gaeltacht, strong community initiatives, sporting and recreational amenities. The continuous development of attractive and distinctive settlement centres requires high standards and enforced planning regulations.

⁷ Programme for Research in Third Level Institutes

⁸ Over 22% of people in the West live within 10K of this corridor

⁹ Forfás (2008) *Overview of the Main Infrastructure Issues for Enterprise*

¹⁰ In the recent Forfás (2008) *Assessment of Water and Waste Water Services for Enterprise*, a number of issues were highlighted for the West, including a forecast insufficiency of water treatment capacity in Galway by 2013, and immediate capacity deficits in waste water treatment in Galway and in Ballina by 2013

Leadership and Strategic Capacity

Local leadership plays a crucial role in driving regional development in terms of infrastructures, concentration and well planned urban development as well as in terms of facilitating enterprise development through stimulating networking, clustering and innovation activities. The region appears to have engendered a strong networking culture within the enterprise sectors (and in particular software and medical devices), perhaps stimulated in the first instance as a result of the closure of Digital.

Although some initiatives are driven from regional and/or local levels, a more structured and collaborative approach is necessary to drive regional development. Mechanisms are required, both within the enterprise development and planning cohorts, that designate the authority, autonomy, resources and responsibility necessary to drive strategic development and implementation at a regional level (within the national context). The review of the Regional Planning Guidelines (RPGs) by the Regional Authorities, and the development of the Regional Competitiveness Agendas (RCAs) are a positive step in outlining key priorities and actions.

Conclusion

The West is rich with natural resources and habitat, combined with the benefits of dynamic urban locations that provide the services and attractiveness factors for enterprise investment and development. It has a diverse and vibrant enterprise base, as well as a strong entrepreneurial culture and range of creative skills and a developing innovative capacity.

Current trends indicate that foreign investment is more likely to be attracted to urban areas of scale, that have the critical mass to provide the services, access to talent and skills, and ease of access (both physical and electronic) to international markets. The report of the Enterprise Strategy Group *Ahead of the Curve* (2004) highlighted the fact that the role of indigenous firms and their contribution to Ireland's future economic growth will become increasingly important. The fostering of entrepreneurs, the creation of an environment conducive to innovation, the stimulation of the 'clustering' of smaller firms and their engagement in networking, partnerships and alliances take on a renewed priority - and in this context the hubs and other towns have a vital role to play. Aspects of the West's natural resources appear to be under-utilised and hold significant potential for future economic development within more rural and coastal areas (e.g. its coastal/marine/forestry assets).

The realisation of a 'whole of region' economic development strategy requires that access to markets for both physical and electronic goods and services is considered of paramount importance. Integrated national and regional transport networks and connectivity are no longer differentiators, but essential foundations to harnessing potential.

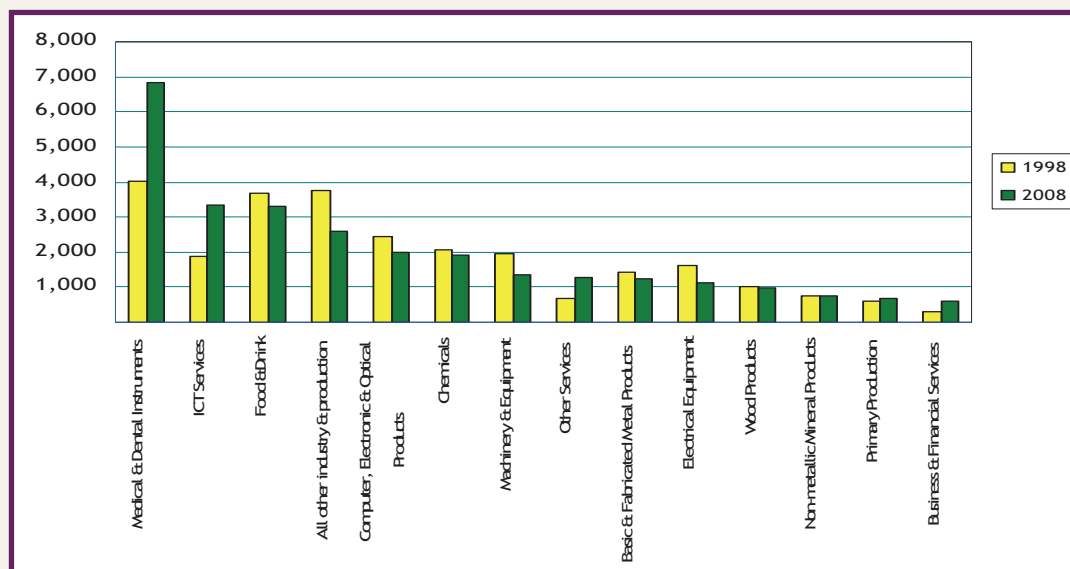
4. Realising Future Potential: Sectoral Opportunities

The areas outlined below were highlighted during the regionally based workshop, informed by employment trends and the existing enterprise base¹¹. The outline for each sector demonstrates the suite of assets that provide a basis for growth. Although this section takes a sectoral focus, the need to develop innovative capacity and to stimulate business engagement in R&D and innovation is pervasive across all sectors and activities.

- Medical Technologies
- Software and ICT services
- Tourism
- Renewable Energy
- Creative Industries and Digital Media
- Food Fisheries and Aquaculture

The region performs well in terms of high value added manufacturing activities, as demonstrated by the significant growth over the past decade in the medical technologies sector in particular. Sectors such as food and chemicals have been relatively consistent since 1998, while 'All Other Industry' and computer products are experiencing a decline.

Figure 3: Employment in Agency Supported Enterprise 1998 - 2008¹²



Source: Forfás, Annual Employment Survey, 2008

¹¹ The sectors listed here should not be considered an exhaustive listing, and they are not listed in order of priority

¹² Taken as a proxy for export oriented enterprises - excluding tourism

The region demonstrates potential to further develop companies that are exporting, build on its strong entrepreneurship performance, as well as enhancing the development of strong locally trading activities including the creative sector¹³. It is likely to experience an increased shift toward internationally traded services based on existing strengths in ICT related services, and growth (although from a low base) in business and financial services. The natural assets in the region position it well to take advantage of emerging areas such as renewable energies.

Medical Technologies

The LifeSciences sector is undergoing significant change globally, providing both opportunities and challenges for the sector based in Ireland. Advances in technologies, including imaging, data and bio storage and retrieval, communications, RFID¹⁴ and sensors have resulted in increased remote diagnostics and healthcare services. Advances in biological components and in genetic research are resulting in products that are developed to target patient groupings with similar genetic dispositions and realising a shift toward personalised healthcare and regenerative medicines. Nanotechnologies facilitate the development and production of nano-scale devices enabling noteworthy developments in surgical procedures, implantable devices etc.

Research Activity in the West

The Regenerative Medicine Institute (REMEDI) conducts basic and applied research in regenerative medicine, an emerging field that combines the technologies of gene therapy and adult stem cell therapy. The goal is to use cells and genes to regenerate health tissues that can be used to repair or replace other tissues and organs in a minimally invasive approach.

Network of Excellence for Functional Biomaterials (NFB) is a highly networked cluster, with both national and international partners. NFB is developing new technologies to carry therapeutic genes and other biomolecules to specific target sites within the body, including coatings for medical devices and tissue repair scaffolds.

GMIT Medical Technologies Centre is a testing centre for invasive medical devices and a support centre for medical technologies companies

Convergence across technologies presents significant opportunity within this sector. Manufacturing processes will become increasingly complex in this converged environment; Firms will focus also on continuous improvement and increase their investment in process R&D.

Key Assets

The West has built a cohort of innovative companies in medical technologies, many of whom are producing combination products based on converging technologies (such as drug eluting stents) that involve complex production processes, and many of whom are proactively engaged in research and development.

The region also boasts a strong reputation for its well networked software industry, with many companies targeting opportunities in the healthcare sector (e.g. HP). It also has an

¹³ Creative industries also have the potential to trade internationally - but are currently small scale enterprises and/or those serving domestic markets in the main

¹⁴ Radio Frequency Identification

excellent research base including REMEDI and the Centre for High End Computing.

It is particularly important for companies engaged in R&D to have direct contact with clinicians who themselves have time and resources dedicated to research. A Clinical Research Facility has been established at NUIG University Hospital to facilitate translational research (i.e. the translation of research from the laboratory into the market - *from bench to bedside*)¹⁵. Although the physical facility will not be completed until 2010, nine clinical research projects are underway. These relate to a number of therapeutic areas including gastro-intestinal health, respiratory disease, diabetes, public health and psychiatry. These projects are predominantly observational studies and are aimed at increasing knowledge about the conditions and the effectiveness of existing treatments.

Many firms are active members of the national industry association, IMDA, that has recently developed a strategy for the sector in Ireland, and that works to influence the business and regulatory environment¹⁶.

Realising Potential

Although today, the majority of employment in medical devices activities in the West is provided by foreign firms, there is a growing cohort of technology intensive indigenous firms. Building on existing investments, through increased engagement in R&D and innovation (including product, process and services) and collaboration with relevant healthcare clinicians and research institutes would enhance the overall attractiveness of the region.

Continuous investment in training and re-skilling, relevant to the needs of the manufacturing firms is key for future development. Expertise in the area of Quality by Design (QbD), Process Analytical Technology (PAT) and Quality Risk Management are critical if Ireland it is to build on its track record in high value added production. Core skills need to be complemented so that people are equipped with multi-disciplinary skills, or at the very minimum, demonstrate an ability to work effectively and proactively in multi-disciplinary teams.

The convergence 'agenda' presents an opportunity for this already networked sector to engage more closely with the ICT, biopharma and healthcare sectors within the region and in neighbouring regions to identify how they can proactively target such opportunities.

Combination Products

Crosspon, based in Galway, licensed HP technology to create a skin patch for 'smart' drug delivery. Crosspon is commercialising the patch, which was invested in by HP Labs, and making it available to pharmaceutical companies to use in various therapeutic areas.

Boston Scientific, Medtronic, Abbott and Clearstream manufacture advanced drug eluting stents in their Irish based facilities; merging the formerly discrete sub-sectors of medical technologies and pharmaceuticals.

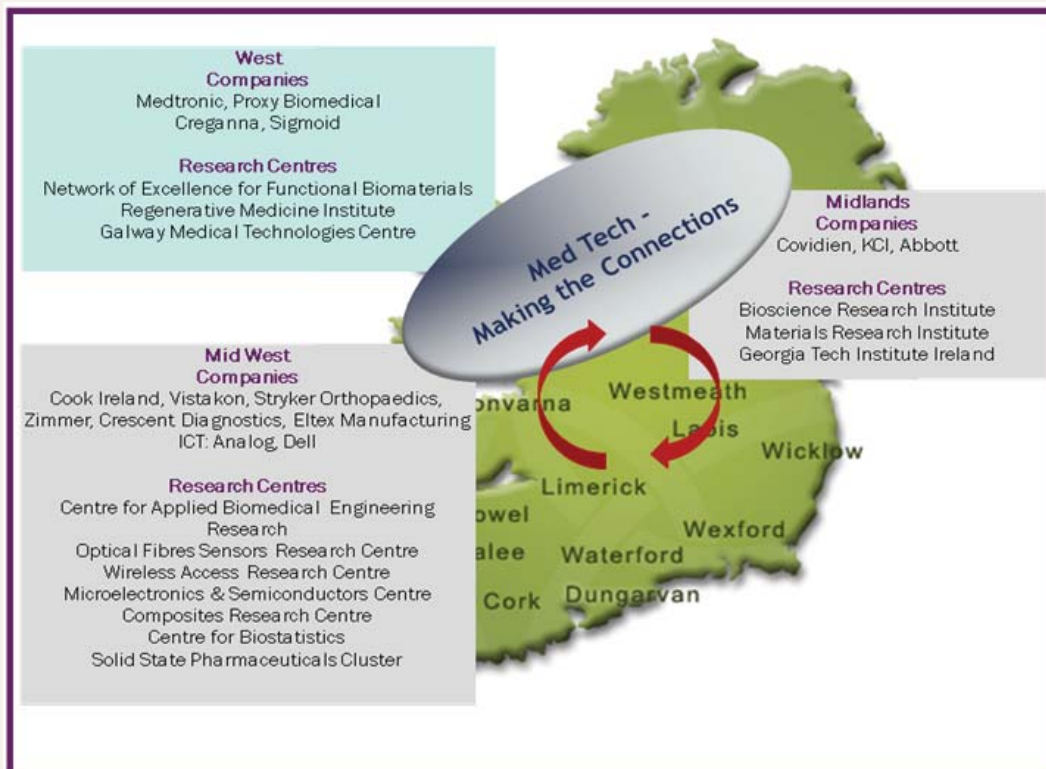
NUIG collaborates with UCD, TCD and Intel on the Technology Research for Independent Living (TRIL). TRIL researches new technologies that enable people to live independent lives in the environment of their choice.

¹⁵ Funded by HSE/HRB -clinical trials are underway and the facility is expected to be completed in 2010

¹⁶ Forfás has recently published *Health LifeSciences in Ireland - An Enterprise Outlook*, that outlines a strategy for the wider LifeSciences sector, including medical technologies

Opportunities exist, for example, in the areas of remote healthcare, diagnostics & analysis, supported by wireless, sensor and optical technologies, as well as combination products such as drug eluting stents, biologically enhanced bone grafting scaffolds etc¹⁷.

Figure 4: Companies and Research Institutes: Convergence - Health LifeSciences and ICT



Software and ICT Services

Computing is moving towards being a utility-like system - with the internet acting like an online electric grid, distributing computing power. There is a global trend away from purchasing monolithic applications from a single supplier toward purchasing best-of-breed, plug-compatible solutions. Basically this means a fundamental shift in how companies are developing, supplying and buying IT infrastructures and software. The opening up of standards and technologies provides a strategic entry point for innovative, small businesses, *wherever they are located* (assuming access to cost competitive, high speed and resilient broadband networks) that can effectively link into the global distributed networks of major players.

This shift toward Software-as-a-Service (SaaS) and pay-per-use infrastructures and applications (often referred to as Cloud Computing) should see an increase in hosted/managed services - requiring data centre infrastructures and associated skills and a very different model of customer relationship management.

¹⁷ Funding and supports are available through Initiatives such as the Industry Led Research Platform (IRLP) (EI)

Within the emerging cloud computing environment the range of services that can be offered on-line include developing and/or providing:

- software applications delivered over the internet on a pay-for-use basis
- software that enables firms to manage the storage and retrieval of documents
- electronic records and information management services (RIMS) - growth for these services is driven by the increase in the levels of data being produced coupled with the increased requirements to retain much of this data for defined periods¹⁸
- technologies that help firms to efficiently manage the energy usage of data centres - a significant growth area in the context of an increased awareness by data hosting firms of the 'green' agenda
- technologies that enhance 'intelligent' search (Semantic web) that deliver relevant and contextualised results.

Key Assets

The West has a strong and established cohort of software companies and research institutes that are well positioned to take advantage of the exponential growth in information. The sector currently employs approximately 3,300 people, almost equally balanced between foreign and indigenous companies. NUIG houses a number of research centres focused on informatics and computational sciences, including the Centre for High End Computing and the Digital Enterprise Research Institute (DERI) that focuses on the semantic web. The region is also well serviced with incubation centres at NUIG and GMIT.

Realising Potential

ICT today is not only important as a sector in its own right, but has a pervasive impact across most, if not all sectors. The application of ICTs changes the way services are delivered (e.g. remote learning and/or remote healthcare and diagnostics), simulation (training), eMusic, Media and Creative content etc. ICTs also facilitate the 'refresh' of more traditional sectors such as food and construction and associated services (e.g. engineering, architecture) through the use /or embedding of SMART technologies and systems (Sensors, RFID, wireless); and enables the monitoring of large scale phenomena such as energy consumption, pollution, weather and global warming.

There is an immediate opportunity for developing cross sectoral potential within the West given the existing sectoral composition that also includes digital media and medical methodology, and given the increased convergence of technologies.

The changing nature of the business models presents opportunities for smaller and niche companies to target global supply chains and to reach global markets. In this context, skills, management and partnership engagement capabilities will need to be enhanced.

¹⁸ Ireland already has a number of well established RIMS firms involves in the management of physical records

What is critical to support the ICT sector itself (and its pervasive use) is the availability of cost competitive, resilient and redundant high speed broadband networks, throughout the country, particularly if Ireland is to position itself a knowledge intensive economy.

Tourism

Fáilte Ireland has developed and published a strategy for tourism in West of Ireland, and targets revenue earnings of €980 million by 2010, with a growth in holiday visitors to between 2.1 million and 2.3 million. The strategic goals for the region are to:

- Develop the region as Ireland's primary outdoor and adventure destination while focusing on environmental sustainability
- Enhance the cultural experience for visitors
- Continue to develop tourism hubs in order to exploit synergies
- Improve access to and within the region.

Key Assets

The strategy envisages taking advantage of the compelling assets within the region to support outdoor activities, including marine and angling and related adventure activities and events, building from the Volvo Ocean Race 2009. The region benefits from its embedded Irish language and culture in a Gaeltacht area providing opportunities to further enhance and build on initiatives and events such as Cnoc Suain, Macnas, Oyster festival and Galway races, developing music and cultural venues, providing opportunities for overseas visitors to experience Ireland's national games etc. GMIT undertakes relevant research in the area of Tourism, Culture and Humanities.

Realising Potential

The region has significant levels of nature designations including Special Areas of Conservation, Natural Heritage Areas and Special Protection Areas. Whereas these designations impose restrictions on the nature of development that can be undertaken, the potential to harness these areas for economic benefit needs to be seriously considered - for example, by developing an eco-tourism economy - demonstrating environmentally friendly practices, energy efficiency, promoting cycle loops and hubs and walking routes, and/or spirituality and wellness products.

Ease of access to and from Galway, and within the region that is supported by a more user centric integrated public transport and road network is essential to harnessing the potential of tourism. The focus should be on enabling the realisation of an integrated holiday, e.g. cyclists to take public transport to get to their cycling destination.

The Fáilte Ireland strategy envisages the development of three marinas at Galway city, Westport and Ballina. It recommends a suite of actions that are required to deliver on the strategy (which are not cited in detail in this report), and perhaps, more importantly acknowledges the importance of a collaborative approach that involves Fáilte Ireland West engaging proactively with Local Authorities, County and City Development Boards, enterprises and state agencies (including OPW, Coillte etc.).

Renewable Energy

There is a major transformation underway in energy markets and energy supply that present opportunities and challenges for Irish based enterprises over the coming years. The global energy goods and services sector is forecast to grow by more than 30% to \$688 billion by 2011¹⁹.

The opportunities are presented in two ways:

- Firms and households can manage energy consumption in a more structured way, and supported by initiatives through SEI, IDA and EI enabled by new technologies and products such as smart metering
- The production of energy using alternative sources such as wind, wave solar and/or biomass - although the timelines and potential for viable commercialisation are different across each of these potential areas.

Supporting services and activities range from the design, manufacture and installation of advanced equipment and infrastructures, development and application of new technologies, project management and engineering services and solutions, operational management of energy assets and infrastructures.

What is particularly significant for the energy/renewable sector is that it is largely a regionally dispersed sector.

Key Assets & Realising Potential

Given the region's natural resources and the existence of the Corrib gas fields, the West has the potential to harness opportunities in wind energy and wood energy and related technologies in the more immediate term and has longer term potential in wave energy.

Wind Energy

An Irish Wind Energy Association (IWEA) study estimates that Ireland could increase its wind energy production by 6,480 MW (from current levels of 1,320 MW) over the period to 2020 - and contends that we need to do so if we are to meet renewables targets. The study estimates that much of this will be produced on the West Coast of Ireland and that the increase in offshore production could increase by up to 27 times. (*Offshore wind generation presents considerable challenges when compared with onshore given the hostility of the environment, tidal activity and difficult site access*). Within the context of significant national growth potential, the West region's contribution to national wind energy is anticipated to grow from current levels of 12% today to 24% (by a total of 881MW) by 2020.

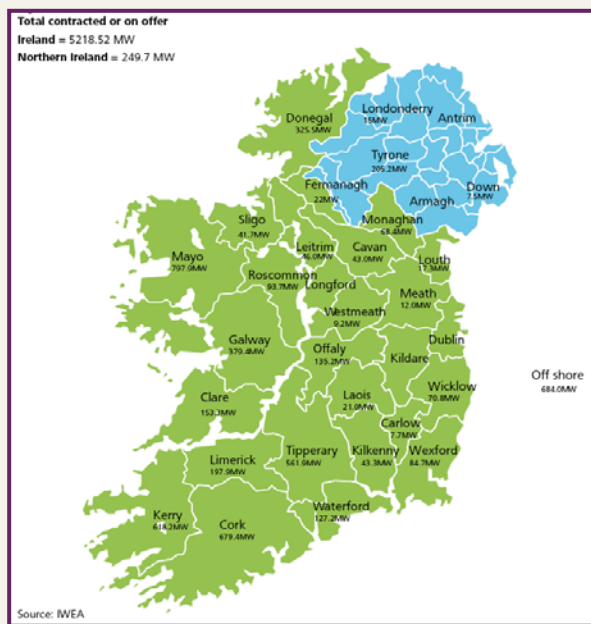
One of the key issues is the need to enhance and/or develop the national grid network in the region. Capital investments in the most appropriate locations need to be prioritised. At the same time, given the natural habitat and environment in the West region, the planning and delivery of such infrastructures will likely be a significant challenge.

¹⁹ UK Trade and Investment, November 2008

Wave Energy

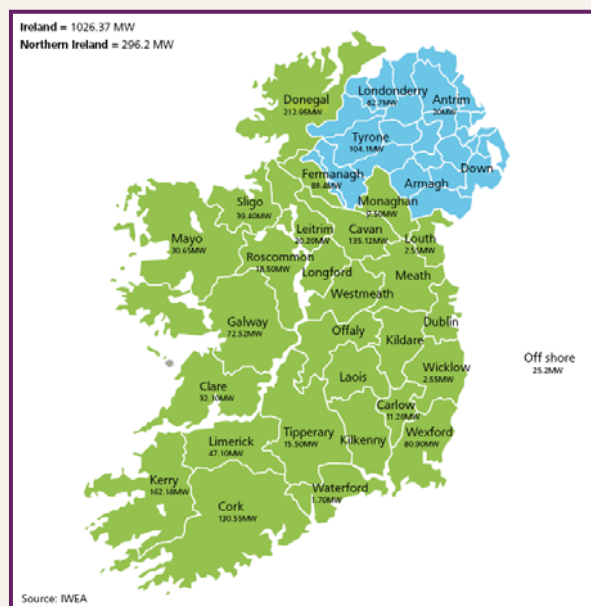
Wave Energy is a longer term proposition, and at a relatively early stage of development, although Ireland is particularly well placed in terms of its geographic location to take advantage of opportunity. Research in wave energy is being undertaken in the neighbouring Mid-West region. The Wave Energy Research team is based in UL, as is the Charles Parsons Initiative on Energy and Sustainable Environment (CPI). CPI represents a merger of six research centres and 30 researchers at UL, focused on researching environment and sustainable forms of energy across the areas of electrochemistry, physics, electronic, mechanical and aeronautical engineering, computer science, maths & statistics.

Figure 5(a): Installed Wind Energy Capacity in Ireland, 2009



Region	% of National Wind Energy 2009	% of National Wind Energy 2020
Border	39%	10%
West	11%	24%
Mid-West	9%	12%
South-West	28%	25%
Midlands	0%	4%
South-East	9%	10%
Mid East	1%	2%
Dublin	0%	0%
Off Shore	2%	13%

Figure 5(b): Potential Installed Wind Energy Capacity in Ireland, 2020



Environmental Technologies

In 2007 the SmartBay pilot project supported by the Marine Institute was established in Galway Bay. The vision is to provide a marine based research, test and demonstration platform which will encourage leading edge researchers and industry consortia to collaborate on important commercial and environmental research to develop new products and services. The objective is to advance opportunities associated with marine resource development and to enhance the ability to monitor and manage Ireland's marine resources. The SmartBay project includes the deployment of a range of instrumentation, including monitoring buoys, wave monitoring instrumentation, and a flow gauge on the River Corrib. The research projects are in the areas of data management, telemetry, climate change research and hydrodynamic modelling. Galway Bay will provide a test and demonstration site for new technologies.

The County Clare Wood Energy Project

This project facilitates and stimulates the update of wood fuel energy and is managed by Rural Resource Development in conjunction with Teagasc.

It was established in 2005 and a number of systems have been installed in the medium scale commercial sector supplying heat to organisations such as hotels, care homes and factories.

It demonstrates a regionally based initiative focused on harnessing natural resources.

Biomass: Wood Energy

The Western Development Commission (WDC) published a report recently highlighting the potential for developing a wood energy sector in the West region²⁰. The region has a significant forestry resource (approx 11.5% of the land area). The report contends that development of the wood energy sector would result in economic benefits for the region including: increased viability of the existing forestry resource; reduced oil dependence; increased supply of indigenous, sustainable fuel; and the creation of enterprise and employment opportunities in areas

experiencing agricultural decline. The analysis pointed to the greatest viable option being in wood heating systems - specifically where fuel savings justify the capital investment.

It is an emerging market, however, and barriers to development need to be addressed if potential is to be realised. These include: limited market awareness and confidence; lack of capacity, skills and expertise in market and supply chain development; limited capacity of the forestry sector to enter the energy sector because of aspects such as plantation size; and inadequate local policy and regulation framework. The report highlights specific actions to address each of these and suggests that a Regional Wood Energy Advisory Group will oversee the delivery of the action plan over the three years.

Realising Potential

Being on the West Coast of Ireland, the region is well served with natural assets in wind and wave. The work of the WDC also highlights potential in how lands can be repurposed for economic benefit particularly in the areas of biomass. The research being undertaken in the SMARTBay initiative and in UL is directly relevant to the sector.

²⁰ WDC (2008) *Wood Energy Strategy for the Western Region*

Our analysis highlights the building blocks that can be leveraged to develop a strategy for the region within the context of Ireland as a whole. A strategy should consider the specific elements of the sector most suited to the region’s capabilities, and the key actions, investment and land use decisions required to make it a reality.

Creative Sectors and Digital Media

The WDC recently published a report on the Creative Sector in the Western region²¹. Their analysis segments the sector and incorporates a range of inter-connected activities and technologies including:

Internet and Software	Radio & TV broadcasting
Digital Media	Publishing
Video, Film and Photography	Advertising
Design	Arts and Antiques Trade
Music	Architecture
Visual and Performance Arts	Fashion
	Craft

The creative sector is made up largely of small scale businesses (often employing no more than ten people) with low export activity - with the exception of the digital media, internet and software segments that are more export oriented.

Locally Trading Creative Activities

There is considerable potential for the sector to enhance its export capacity, and to spread creativity as a valuable capability across other sectors.

A differentiating characteristic for the sector is that quality of life is a key determinant in location of choice - with the landscape, remoteness and lighting in the region being cited as providing inspiration.

At the same time, there are many issues facing the sector that have been highlighted in the WDC report, including education and training, connectivity and broadband high bandwidth capacity, lack of coherent marketing, and access to funding appropriate to the sector. Concentrations of employment are important for attracting creative people and providing the opportunity for workers to move between creative industries and other sectors of the economy. In this context, lack of low cost workspaces tailored to the needs of the creative sectors was cited as an issue, as was low levels of networking within and outside of the sector itself.

²¹ WDC (2009) *Creative West: The Creative Sector in the Western Region* (including counties Donegal, Sligo, Leitrim, Roscommon, Mayo, Galway and Clare)

At GMIT, the design and innovation theme is a multi-disciplinary cohort of researchers spanning all five Schools within the institute. They apply the principles, procedures and processes of design optimisation across the spectrum of areas ranging from medical technologies, to informatics and learning technologies.

Sligo IT houses the Centre for Design Innovation (CDI). It is focused on assisting companies to value design and to integrate it more strategically within their organisations, ultimately leading to greater innovation. CDI provides a series of highly interactive workshops to help companies understand how to apply a design led approach to innovation, as well as facilitation and mentoring to ensure that what is learnt within the workshop environment is applied within the workplace. CDI has developed a rapid-prototyping lab, and publishes a range of case study examples.

www.designinnovation.ie/downloads/innovationbydesign_2008.pdf

Design capabilities are relevant to all sectors in relation to materials, processes, manufacturability, products (look and feel, and ease of use) and branding. In general design capabilities are an underutilised resource across sectors in Ireland but present a significant resource in today's increasingly innovative environment.

Digital Media

Digital Media describes a phenomenon which has evolved over the past decade, whereby digital has transformed the ICT and Media and Entertainment sectors. It has caused these sectors to increasingly converge, driving the creation of new products and services which are delivered over new distribution channels.

The sector is diverse and includes entertainment (film, TV, Games, eMusic), Education (eLearning, digital libraries), consumer information (location-based services) and business related content (e.g. online advertising) as well as the enabling technologies and infrastructures. Although still a nascent sector, many of the sub-sectors within Digital Media (such as mobile/wireless, Internet, Games, elearning etc) show high growth, with rapid future development projected for over the next five years and beyond²². Clustering of enterprise where there are skills available is an important consideration for many companies when making location decisions.

Key Assets

The West is well positioned to take advantage of the growth in the sector. Quality of life is an important location determinant for this sector, and the region's landscape, remoteness and lighting provide the crucial elements required by individuals working in the sector. The region is well represented by companies involved in software, wireless and internet technologies, and film and TV production, and benefits from its access to a creative workforce (which is becoming a more valued resource within the sector). Established business networks include

²² Expert Group on Future Skills Needs (2006) *Future Skills Requirements of the International Digital Media Industry: implications for Ireland*

Research and Business Networks

DERI is a 100 member research institute, dedicated to researching the technologies that will underpin the next generation of the World Wide Web - the Semantic Web.

European Digital Media Network is a national network based in the Shannon region that supports companies in attaining commercial success in the industry, and focused on establishing Ireland as Centre of Excellence.

AMNet provides an online resource of new media enterprise in the West providing creativity and content through technology

AMnet and European Digital Media Network demonstrates both the significance of the sector to the region, and the desire by firms to collaborate to capture opportunities.

Although indicated as being relatively less important to companies in terms of location decisions²³, research institutes such as DERI (on semantic web) and the Centre for Design Innovation at Sligo IT, as well as those specifically on ICT related research, contribute to building the skills based necessary to support and attract the sector.

Realising Potential

A recent EGFSN (Expert Group on Future Skills Needs) report identified the key skills for the sector, informed by consultation with international firms as well as those based in Ireland²⁴. They include:

- Management / project management
- Design, Artistic/creative (concepts, animators, modellers, visual effects etc)
- Production / pre-and post production (film & TV)
- Programming and technology development (including C++, Java, Oracle or SQL)
- Marketing and distribution (for the electronic environment)
- Quality assurance.

Continuous investment in upskilling and reskilling is an important factor for any sector, and as much of the creative sector is shifting toward digitally based technologies, knowledge of relevant technologies and new ways to access markets are increasingly important. High capacity broadband availability at a competitive cost is critical.

The WDC research also highlights the particular importance of clustering and concentrations of employment. A review of existing infrastructures (incubation/innovation centres), and relevant 'soft' supports, should be undertaken to assess how they might be enhanced to stimulate further networking and growth of existing companies, and to encourage new investment into the region.

²³ ibid

²⁴ ibid

Food, Fisheries and Aquaculture

The dynamic for the food industry has changed significantly in recent years, transitioning from being largely production-led, to now being led by market demands. Branding and labelling play a particularly important role as consumers look for products they feel they can trust. The increasing focus by leading retailers and manufacturers on the issue of sustainability informs the more environmentally friendly requirements they set for their suppliers. Retailers too are consolidating and there is evidence of moves to international structures and centralised procurement.

The Irish seafood market is valued at €382 million with both food service and retail experiencing significant growth in recent years. The fresh fish domestic market is growing by 27% annually.

Aquaculture is the farming of aquatic organisms such as fish, molluscs, crustaceans, aquatic plants and sea urchins. Though still a relatively young industry, aquaculture has already grown to the stage where it accounts for 25% of the value of total fish production in Ireland and is increasingly a key supplier of raw material for the processing sector. Global demands on the food and agricultural sectors impact directly on aquaculture and it is anticipated that worldwide aquaculture production will have to increase substantially.

Design and Branding in the Food Sector

Connaught Gold has a diverse business. Its retail Sales and Foodservice division engaged with the Centre for Design Innovation at Sligo IT to build its capabilities in brand and strategic new product development. Its aim is to become the number two in retail sales and specific butter segments.

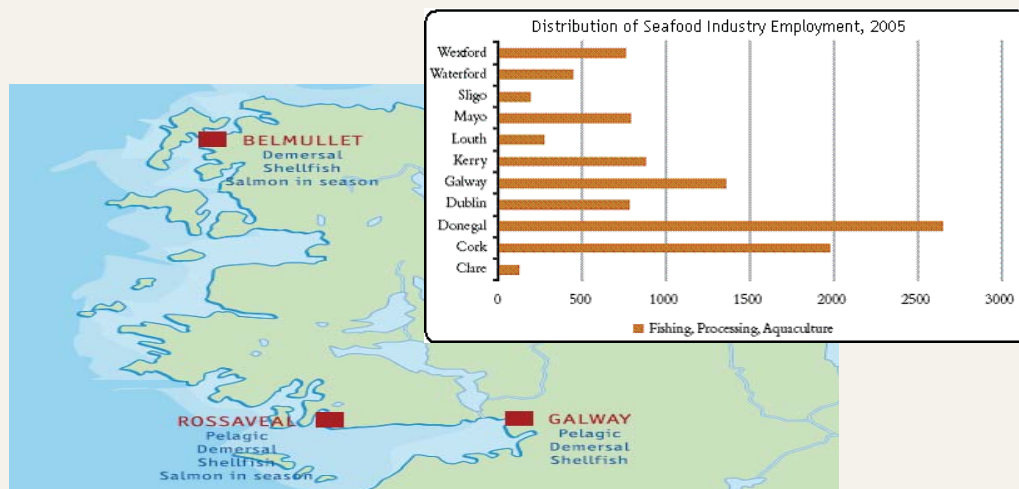
Key Assets

Although the food sector is not a primary employer in the West (as it is in other regions), it employs almost 3,300 people, with much of the production concentrated in county Roscommon. It has been a relatively stable employer over the past decade and is a sector that contributes substantially to Irish Economic Expenditures in terms of third party services and materials.

The Teagasc Animal Science Research Centre at Athenry supports the agriculture sector through its research in sheep production, animal reproduction and organic milk & beef production. Its Rural Economy Research Centre, also at Athenry, produces social science research and policy advice aimed at improving the competitiveness and sustainability of Irish agriculture.

Because of its location, the West is well positioned to take advantage of the future growth in aquaculture. The Irish Marine Institute is based in Oranmore and conducts a broad range of marine based research with commercial as well as academic value. It focuses on areas such as fish stock surveys and data analysis, seafood safety and environmental analyses. GMIT Shell Tech Research Labs, established in 2005, conducts research on shellfish condition, storage and transport. The facility consists of a purpose built, self-contained suite of laboratories and offices.

Figure 6: Distribution of Ireland’s Seafood Industry Employment - 2005



Source: BIM & Report of the Seafood Industry Strategy Review Group (2008)

Realising Potential

The food and fisheries sector runs to very tight margins and increasing efficiencies and productivity are key objectives for the sector in Ireland, as is the EI supported agenda to broaden access to a wider range of eurozone markets. There is an ongoing need for primary producers and food & drinks processors to work with the various research and market support bodies to develop their businesses. Actions required to stimulate the ongoing transition and development of the sector include:

- **Addressing cost competitiveness:** As a tight margin/high utility/high labour content business, Ireland's relative competitive positioning is particularly important²⁵. Although cost competitiveness is a national issue firms have already been taking action, through e.g. the Large Energy Users Industry Network which is supported by SEI and EI and in which many food companies participate.
- **Improving productivity** and business processes are essential for the food sector. The agencies actively support productivity enhancements, training and organisational change. A Productivity Guide for firms has recently been published by Forfás which should provide a useful practical tool for companies to identify actions they can take specific to their own company needs²⁶.
- The shift from a production-led to market-led model has **implications for skills** within the sector, and research by the EGFSN indicates the following needs:
 - Efficient supply chain management, supported by the relevant skills in procurement, international logistics, sales to address regional and/or multi-national buying

²⁵ A number of the larger food companies are already engaged in the Large Industry Users Energy Network (LEIN) that seeks to find ways of optimising energy usage and ultimately reduce costs

²⁶ Forfás (2009) *Boost your Company's Productivity - Simple Steps*

centres, together with customer relationship management, inventory and working capital management etc.

- Training on continuous improvement and lean principles at all levels including e.g., automation and PLC control diagnostics
- The ability to identify and interpret consumer trends, research and development programme and portfolio management, design engineering, branding and packaging technologies
- Knowledge and use of relevant technologies will become significant in areas such as traceability and the use of RFID tags
- Marketing and language skills will become increasingly important in the context of targeting new Eurozone market opportunities
- **Infrastructures:** continuous improvement in infrastructures to facilitate efficient logistics and distribution operations for food and drinks companies is particularly important. Transport costs are a major input cost in the food and drinks sector and the typically high costs here in Ireland are negatively impacting the sector's potential.

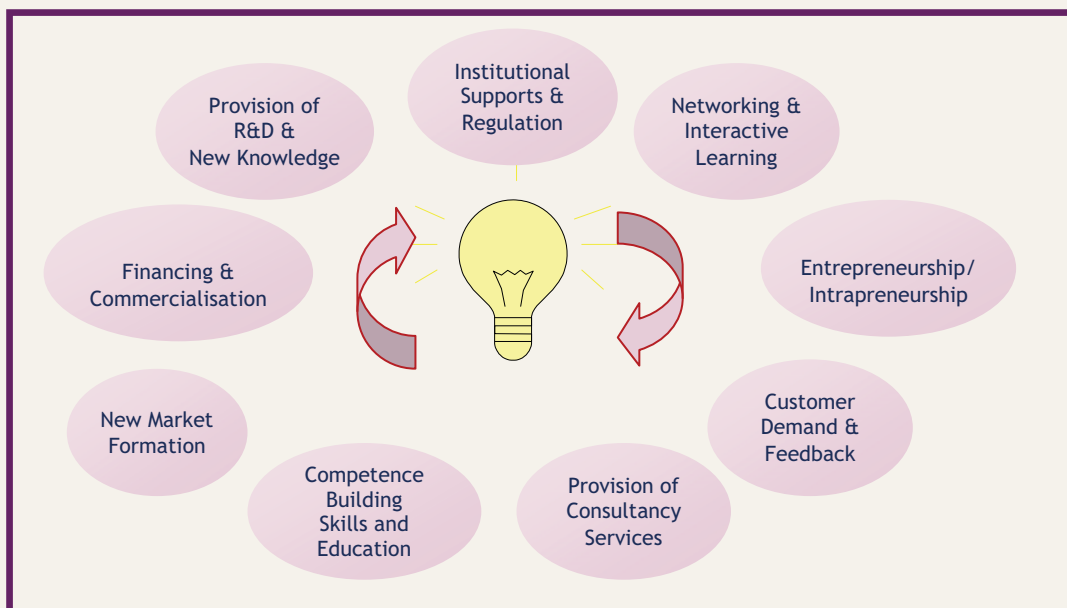
5. Realising Future Potential: Enhancing the Business Environment

Innovation

Innovation is about applying knowledge and translating ideas into high-value products, processes and services. There are many sources of innovation, including end customers, firms with complementary products and/or services, and research institutes.

The entire ‘innovation system’ involves a number of elements, each of which is important in its own right. Successful innovation at regional levels is based on the effective interaction between the elements and engagement by firms, financing institutions, Higher Education Institutions, Government Departments and Development Agencies. Regions do not (and should not) operate in isolation, but do so within the wider national context. Interactions at both national and international levels play an important role.

Figure 7: Activities that Stimulate Innovation



Source: Based on Edquist (2005) ‘Systems of Innovation - Perspectives & Challenges’ in Fagerberg et al (2005) *The Oxford Handbook of Innovation*

The factors that influence the development, diffusion and use of innovation are not independent of each other:

- Innovative thinking and creativity is stimulated in an environment that is dynamic, interactive and collaborative
- Enablers and supports provided by government facilitate innovation and range from establishing the ‘right’ fiscal, IP and regulatory environment, to supporting education

and training, to providing funding for R&D initiatives and through to facilitating networks and ‘on-the-ground’ introductions and ease of access to technologies

- Government departments and agencies themselves can directly stimulate innovative capacity by developing innovative ways of enhancing service delivery and engaging with the business community.

Many of the ‘building blocks’ are in place in the West region in terms of incubation centres, research institutes, technology parks and business networks. The indicators for Business Expenditure on R&D show that the West comes in second to Dublin in terms of percentage of national total although at 12.5% is still considerably behind that of Dublin’s 41.8%. The gap is not particularly surprising, given Ireland’s relatively new investments in Science, Technology and Innovation. At the same time, the HEI sector has harnessed 13.7% of the national expenditure on R&D, following Dublin, and the South-West²⁷.

The existing dynamic base of high value adding companies, the existing collaborative efforts between companies and HEIs (e.g. HP, Boston Scientific, Storm Technologies), and between companies themselves (AMNet, Mayo Engineering Cluster), and the presence of a creative work force augurs well for the region’s ongoing development in further enhancing its innovative capacity.

There are a number of supports available including Industry-Led Research Platforms, TechSearch, investments in Incubation and Innovation Centres, and direct financial and advisory support to companies.

Entrepreneurship

Mayo Ideas Lab is a pilot project designed to stimulate additional entrepreneurial and innovative activity in County Mayo. The objective is to investigate the conditions where the application of an innovation process that is multi-sectoral can be actively pursued.

Established in 2008, it is a collaborative project led by the Mayo County Development Board, and involves Údarás na Gaeltachta, Mayo County Council, WestBIC, FÁS Mayo VEC and GMIT.

Over time we are likely to see a shift in the balance between foreign and indigenous companies in terms of their contributions toward economic growth. Indigenous companies today, even those solely on domestic markets, face international competition. For example in the retail arena, international players in supermarkets, pharmacy and hotels compete locally with indigenous companies. That said, changing business models and the internet present significant opportunities for niche, innovative companies to address global markets in a range of different ways.

Whereas mobile (foreign) investment tends to be attracted to the larger urban areas, there is potential within the region to create competitive environments to attract a concentration of new company start-ups in hub towns and other locations.

²⁷ The South-West benefits from the existence of Tyndall Institute that currently employs approximately 300 researchers and has strong international connections with both research institutes and firms

The 2008 GEM Entrepreneurship in Ireland report ²⁸ indicates a very supportive environment in the West toward entrepreneurship:

- A high rate of established entrepreneurs
- The highest rate of early stage entrepreneurial activity (at 10% compared with 8.1% nationally)
- The rate of informal investment is highest amongst the regions.

In addition, the rate of High Potential Start Ups supported by EI is one of the highest nationally outside of Dublin.

Recent developments arising as a result of the economic downturn has seen a different group of people becoming unemployed - particularly those from the professional sectors. These 'new' unemployed provide a cohort of highly skilled, innovative and creative talent within the region. There is a view that higher rates of personal savings could be leveraged to invest in innovative ideas, creativity and entrepreneurship. FÁS and Enterprise Ireland are working together to consider how best to harness this capability.

Skills and Education

The National Skills Strategy remains relevant today, particularly in the context of continued re-skilling and up-skilling of people within the workforce as well as preparing those who have found themselves unemployed to take advantage of new opportunities when the economy recovers. This report has outlined specific skills required for those sectors with high potential in the region, some of which can be delivered at regional level.

Employees in all jobs will increasingly be required to acquire a range of generic and transferable skills including people-related and conceptual/thinking skills. Work will be less routine, with a requirement for flexibility, continuous learning and individual initiative and judgement. The core skills of science, engineering, electronics and R&D related skills are relevant to a wide range of sectors, based on strong capabilities in maths and literacy, and fundamental to the Smart Economy. The West benefits from a cohort of people with capabilities in creativity and design, skills that have become increasingly important in the more flexible, innovative workplace²⁹.

Many sector specific skills reports highlight the companies' view that graduates would greatly benefit from industry placements as part of their education programme³⁰.

Accelerated Gateway Development and the Atlantic Corridor

Accelerated development of the gateway has been identified as a key priority within the context of the NSS. The increasing international competition at the level of cities for FDI, coupled with the fact that internationally traded services activities tend (in the main) to congregate in well serviced urban areas that offer a multi-cultural and multi-lingual

²⁸ Fitzsimons & O’Gorman (2008) Entrepreneurship in Ireland 2008 - GEM - Annual Report for Ireland

²⁹ Forfás (2008) *Catching the Wave - A Services Strategy for Ireland*

³⁰ See Expert Group on Future Skills Needs (various reports) at <http://www.egfsn.ie/>

workforce often required underlines the importance of urban centres of scale in driving enterprise development.

Galway plays an important role within the context of the Atlantic Corridor initiative whereby the development of critical mass can be achieved through greater mobility and access with and between the cities of Limerick, Cork and on toward Waterford.

Broadband - Essential for Regional Development

Efforts need to be made to dramatically improve and future proof Ireland's broadband infrastructure, with a focus on delivering pervasive, cost competitive, quality broadband across the country. Although a metropolitan area network is in place in the Gateway, there has been no such investment in Tuam, a designated hub - this could be integrated with the proposed water services scheme if funding were made available.

From the perspective of realising the potential within the regions, the lack of adequate broadband services for commercial activities requiring download speeds of greater than 2 Mbits is a key issue. According to the Galway County Council, and representatives of the Galway County Economic Forum the Government's response with the National Broadband Scheme is inadequate. At its full rollout it will only offer speeds in 2010 ranging between 1.6Mbps and 6.8Mbps and by 2012 will range from 2.3Mbps and 10.4Mbps - well below international standards, and inadequate to serve the future needs of knowledge intensive services and activities.

Where the necessary infrastructure to achieve quality broadband access *is* in place, critical issues such as connection costs, backhaul, service competition and 'last mile' connections need to be urgently addressed.

6. Priority Actions

The suggested actions below seek to address a number of the opportunities and challenges identified in this report, and will benefit from increased proactive collaboration across the relevant actors in a structured way. There are many actions that can be taken at a regional level and others that require a national response. However, it is incumbent upon the regional actors to also consider how they can best take advantage of national initiatives, and their delivery locally.

A number of cross-cutting recommendations concerning national level action arise from Forfás' work in relation to all of the individual regions as part of the Regional Competitiveness Agendas process. These are set out in the final report: *Regional Competitiveness Agendas: Overview, Findings and Actions*, which is available separately. Key areas of focus are: infrastructure - planning, development & delivery; accelerated development of the gateways (including leadership and governance issues); and mechanisms to initiate and support enterprise related regionally based initiatives).

The priority actions relevant to the West are set out below.

Enhanced Development Agency Collaboration³¹

As ways of doing business are changing, firms will increasingly engage in alliances, partnerships and networks, both in Ireland and across the globe. Business models are changing whereby open innovation (across companies) is becoming a reality; smaller technology intensive companies have a range of options for targeting their end customers, including entering into licensing and/or revenue sharing arrangements with larger global companies.

As companies increasingly network, it presents an opportunity for the development agencies in the West to enhance *their* collaborative actions to facilitate companies in this environment, and to:

- Provide clarity on the availability of business supports, the role of each regionally based agency and key contacts
- Stimulate interactions *between* sectors - particularly where there are opportunities for convergence (e.g. medical devices and ICT), working with the relevant industry associations
- Facilitate interactions between HEIs and firms by promoting awareness of existing initiatives, and working across the community of multinational and indigenous firms - in particular the Industry Led Research Programme, engagement with Competence Centres, Skillnets sector specific training initiatives, and trade missions

³¹ The recent McCarthy report will be considered by Government and may have implications for the agencies' operations in the regions. Given that it may be some time before decisions, and more particularly implementation, becomes a reality - steps can be taken in the interim to address the complexities faced by potential client companies

- Provide ongoing feedback on regionally based initiatives (whether driven by the agencies themselves or otherwise), to share experiences on what is working (or not) which will in turn inform the policy and planning process.

Building Innovative Capability and Capacity

- Consider how best to enable companies to access technologies and research from HEIs to include basic aspects such as:
 - The renaming of technology transfer offices which is not intuitive to firms
 - HEIs and research institutes providing information on their websites from the perspective of the end-user (including industry interests in research) so that research capabilities are demonstrated and searchable in terms of technologies and their application to industry problems/potential (*and not by research department*)
- Build awareness through the development and identification of case studies (e.g. convergence products and services (IMDA, IDA, EI))
- Harness the design and creative skills in the region through the establishment of skills based networks and application *across* sectors, and/or the holding of demonstration events
- Regionally based government bodies and agencies to assess how they themselves can engage in innovation, improve performance, increase service efficiency and minimise costs. Innovation in the public sector can improve innovative capacity within its own workforce, and stimulate innovative practices through business facing services (Development Agencies, Local Authorities).

Stimulating Entrepreneurship

- Where appropriate for marketing the capability of a region, include relevant indigenous companies as demonstration sites on itineraries for potential overseas investors
- Harness the capabilities of the 'new' highly skilled professional unemployed to identify potential opportunities and to further develop innovative and entrepreneurial capacity (e.g. IP negotiations, developing business plans, identification of sources of finance, mentoring)

Environment and Planning

Discussions at the workshop cited the challenges faced with planning for enterprise development within the context of areas of protected natural environment. There is a strong recognition of the need to ensure that development is undertaken in a way that is harmonious with the local landscape and implemented in a manner consistent with the implementation of habitat designations and directives.

- Proactively highlight to communities the need for economic infrastructures to underpin future development of the region. Consultation processes should ensure that such infrastructures are delivered in a sensitive and practical way, taking a balanced and equally weighted approach so that human and ecological habitats can operate sustainably in harmony.

Untapped Assets

There are plans in place to relocate the Galway port to a deepwater location and to develop the existing Port facilities into a marina (although there are views that the ambition of this project may be under-realising the tourism potential).

- Review access and transportation networks in the context of these proposals, prioritise infrastructures, and develop a coordinated approach to delivery and implementation of physical infrastructures and services.

The need to fully explore the potential of the Rossaveal Port was raised by stakeholders during consultation. International shipping trends toward larger vessels has the potential to impact on the ability of Irish ports to continue to offer the current range and frequency of services unless adequate deeper water facilities are provided.

A number of ports in Ireland have the potential to provide deep water services.

- In the context of a shift toward greater services activities and reduction in bulk volumes over time, a national approach to determining where the optimum locations for future investment in port infrastructures (and internal access routes serving them) is required, in the context of overall demand for, and supply of, port capacity³².

Physical Infrastructures

Water and Waste Water Infrastructures

A key economic resource of the region is the water and waste water infrastructure which needs to be developed to meet the increased standards of the EU Water Framework Directive and to cater for future demographic and economic growth.

- The capacity in the Gateways and Hubs in the region will not meet the demand in the case of Ballina and Galway with Castlebar and Tuam operating at the marginal limits³³, and deficiencies have been identified in other urban and rural locations throughout the region. Given the levels of investment required, an analysis needs to be undertaken to determine how best to fund water provision between user and exchequer sources (and whether at national or regional levels).

Roads

- As well as having implications for traffic management in Galway City, inaction on the Galway City by-pass will mean that the new Dublin motorway will terminate in an area of the city without sufficient road links to manage the traffic leaving the motorway. An appropriate and speedy resolution to the planning difficulties surrounding the by-pass should be encouraged as a matter of urgency

³² According to the Irish Maritime Development Office (IMDO Ireland), all 12 ports in Ireland reported a decline or no growth in volume in 2008.

³³ Forfás (2008) *Assessment of Water and Waste Water Services for Enterprise*

- The Oranmore (Athenry)- Gort section of the N18 (28km in length) has been deferred, and needs to be reprioritised as a critical element of the Atlantic Corridor and access infrastructures for enterprise
- The N17, an important inter-regional and intra-regional route, is at an advanced stage of planning, but is without funding or a definite start date. Investment and delivery needs to be prioritised as significant commuting takes place from the towns of Tuam and Claregalway into Galway City and congestion on the existing N17 represents a major developmental challenge for these towns
- Funding is also required to improve other national and important regional roads in the area, particularly those with large volumes of tourist traffic such as the N59 from Galway to Clifden, and other routes such as the N5 (Scramoge/Ballaghderreen) and N59 Belmullet to Ballina.

Rail

The need for ‘double tracking’ from Athenry to Galway to improve the efficiency of potential commuter services has been identified as having some merit and had been included in the Gateway submission to the Gateways Innovation Fund.

Phase two of developments on the western rail corridor would have seen the line extended from Athenry to Tuam and Claremorris. Phase three would see the continuation of the track from Claremorris to Colooney in Sligo. While this route way has been preserved and is being maintained, given the economic downturn and resource constraints it is not possible to give indications of timelines for investment.

Against this backdrop, continued investment in the road infrastructure (N17) is essential to strengthen this component of the Atlantic Corridor.

Broadband

As a designated hub, investment to provide Metropolitan Area Networks in Tuam and Castlebar should be prioritised. In Tuam’s case, this could be integrated with the proposed water services scheme if funding were made available.

Where the necessary infrastructure to achieve quality broadband access *is* in place, critical issues such as connection costs, backhaul, service competition and ‘last mile’ connections need to be urgently addressed at a national level.

Appendix I

Existing Enterprise Agencies, Initiatives and Supports³⁴

The enterprise development agencies play a key role in stimulating the development of new businesses, facilitating the expansion of existing companies, and targeting new foreign direct investment through a broad range of initiatives. In conjunction with Forfás they influence policy by providing on-the-ground information about the real issues facing business (in areas such as infrastructures, education and regulatory environment).

The agencies work together to market and promote Ireland internationally as a ‘good place to do business’ and with a strong reputation for high quality exports, and within that context marketing the capabilities of regions specific to potential investors’ needs. All of the agencies work to deliver value for money for their expenditure, which is monitored using a range of indicators including increased exports, productivity, innovation and employment.

Enterprise Ireland

Enterprise Ireland’s core objective is to drive export growth by creating and growing internationally competitive businesses and facilitating entrepreneurship throughout the country. They have offices and representatives established in a range of locations throughout Ireland and their Regional Headquarters is based in Shannon. They also have a range of offices overseas that facilitate and support companies in gaining a foot-hold in new markets. They provide both financial and ‘softer’ supports to:

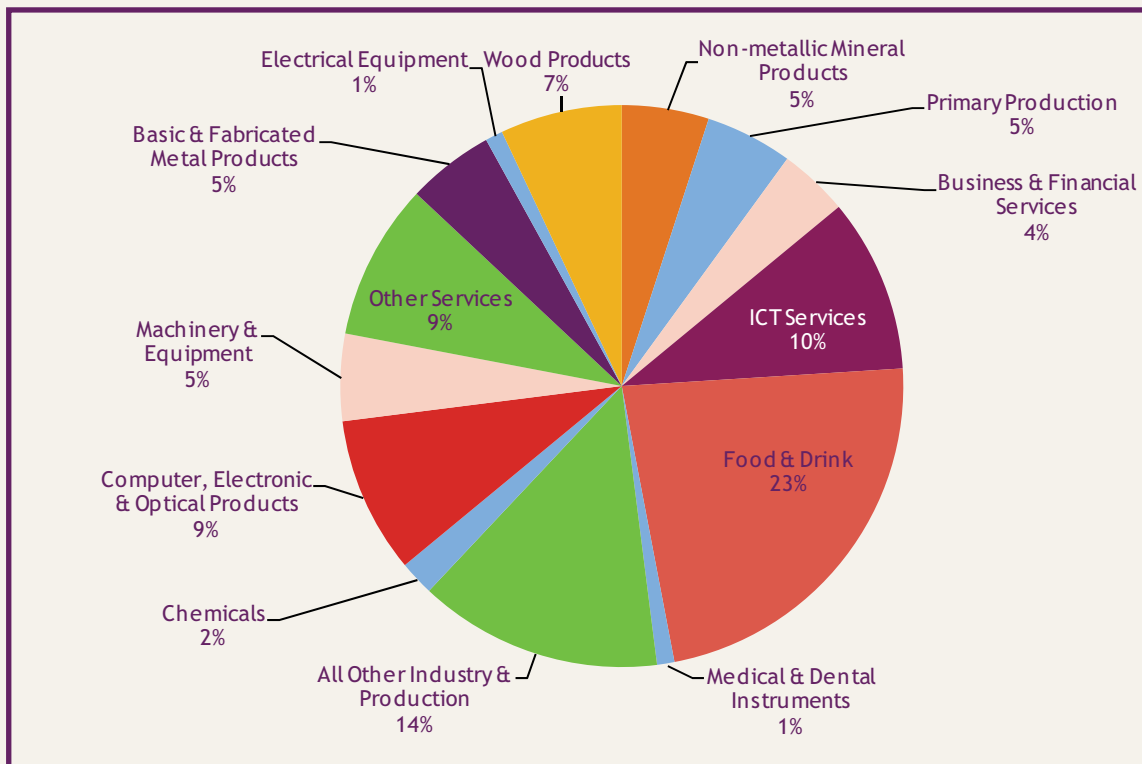
- Stimulate and support entrepreneurship
- Stimulate investment in R&D and innovation - through financial supports, Intellectual Property advice, and TechSource (technology acquisition)
- Support company expansions and investment in capital and productivity initiatives
- Provide supports for training and management development
- Facilitate companies to participate in trade missions across the world, enable introductions and provide guides to accessing new markets
- Provide supports for mentoring specific to a business’ requirements (e.g. in marketing, finance etc.)
- Facilitate establishment of business networks and facilitate linkages with HEIs (through Innovation, Industry-Led Research Platform and Business Networks programmes, and through supports for Technology Transfer Offices)
- Support the provision of a range of property solutions.

³⁴ This overview represents a selection of existing agencies, initiatives and supports and is not a complete listing

Enterprise Ireland Activity in the West

The Enterprise Ireland client base in the West (in 2008) employs over 14,000 people, accounts for approximately 7% of total employment and is dominated by firms in the Food, ICT services and computer and electronic equipment sectors (see below).

Figure (a): Employment in EI supported companies in the West, by sector (2008)



Source: Forfás, Annual Employment Survey, 2008

Enterprise Ireland has supported the development of 25 Community Enterprise Centres across the region, with eight in Galway, twelve in Mayo and five in Roscommon.

The Agency has also provided funding for the development of Campus Incubation Centres at Galway Mayo Institute of Technology (Galway and Castlebar campuses) and National University of Ireland, Galway.

Under the Applied Research Enhancement Scheme, EI has funded the establishment and development of the Galway Medical Technologies Centre for Clinical Analysis, and Shelltec, which researches technologies for the marketing of live shellfish products.

Other activities include roll-out of the EnterpriseSTART campaign in the region to encourage the emergence of new high potential start-up companies and provide information and referral for established and nascent entrepreneurs about EI and other enterprise supports at a local level. EI also works closely with the CEBs in the region, for example enabling access to the EI First Flight programme to eligible CEB client companies who are ready to enter export markets.

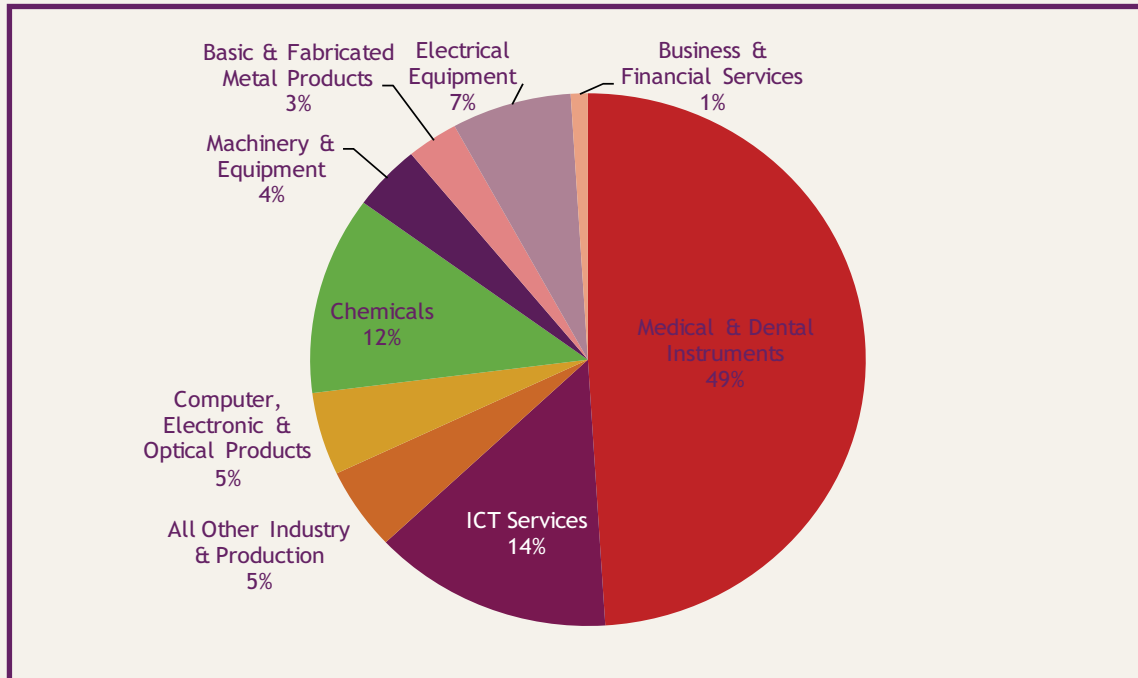
IDA Ireland

IDA is responsible for the attraction and development of foreign direct investment (FDI) in Ireland. It is focused on securing investment from new and existing clients in the areas of High End Manufacturing, Global Services and Research, Development and Innovation. Key sectors include Life Sciences, ICT, Engineering, Financial Services, International services, Digital Media and Consumer Brands. The IDA is also focused on emerging areas such as Clean Technology, Convergence and Services Innovation - areas that offer exciting new investment opportunities.

The IDA attracts overseas and inward investment by:

- Focusing on business sectors that are closely matched with the emerging needs of the economy and that can operate competitively in global markets from an Irish base
- Building links between international businesses and third level education, academic and research centres to ensure the necessary skills and research and development capabilities are in place
- Pursuing Ireland’s policy of becoming a knowledge-based economy by actively building world-leading clusters of knowledge-based activities
- Compiling up-to-date statistics and facts for research into industry, the economy and FDI in Ireland.

Figure (b) Employment in IDA supported companies in the West, by sector (2008)



Source: Forfás, Annual Employment Survey, 2008

The IDA also provides serviced sites, pre-planning approval and buildings (buildings are provided by the private sector on IDA serviced sites). IDA is developing a limited number of larger scale strategic sites that are intended to service utility intensive enterprise activity (e.g. bio/pharma manufacturing, data intensive services).

IDA Ireland activity in the West

The IDA Ireland client base in the West (in 2008) employs over 13,600 people, accounts for approximately 7% of total employment and is dominated by firms in the Medical Technologies and ICT services sectors.

A key activity for IDA in the regional context is the development of a strong value propositions for attracting high value FDI to the region based on its particular strengths and competencies and leveraging complementary strengths and competencies in other regions. The RCAs will contribute to this process.

Major recent IDA project announcements in the West region and their activities include:

Company	Sector/Activity	Estimated Job Numbers
IBM	Software	30
Fidelity	Finance R&D	49
Nortel	ICT Services	60
Celestica	Electronics	120
USCI	Medical Technology	125
AMO	Medical Technology	20
Cisco	Software	200
Respironics	Medical Technology	105
Ulbrich	Industrial Products	40
Labcoat	Medical Technology	68
CSN Stores	Internet Retailing	200

Údarás na Gaeltachta

Údarás na Gaeltachta is the regional authority responsible for the economic, social and cultural development of the Gaeltacht areas of Ireland. Its overall objective is to ensure Irish remains the main language of the Gaeltacht region and is passed on to future generations. Its economic mission seeks to encourage new investment and employment opportunities in Gaeltacht areas.

The Gaeltacht covers parts of counties Donegal, Mayo, Galway and Kerry - along the western seaboard - and also parts of counties Cork, Meath and Waterford. Údarás is structured on a regional basis (North, Connacht/Leinster and South) and has offices in Donegal, Mayo, Galway, Kerry and Cork.

Key economic development activities undertaken by Údarás within the Gaeltacht areas include:

- Attracting high value investments (especially in high technology services), both indigenous and from overseas, to the Gaeltacht
- Providing attractive property solutions for enterprise development in the Gaeltacht
- Working to upgrade services and infrastructure (physical access and telecommunications) - especially where Industrial Estates and Business Parks are located
- Initiatives to strengthen the competencies and qualifications of the workforce
- Initiatives in support of entrepreneurship and early stage start-up companies, including provision of incubation facilities

In providing supports to both FDI and indigenous enterprise investments, Údarás operates within the same regional aid framework as EI and IDA and offers a similar suite of supports to enterprise as the other national agencies, in some instances effectively acting as an ‘agent’ for mainstream programmes managed by EI or IDA (for example the R&D programme and the more recent Enterprise Stabilisation Fund).

Science Foundation Ireland

Science Foundation Ireland (SFI) is the state agency that promotes investment in basic research, particularly in the science and engineering that underpin the fields of biotechnology, information and communications technologies (ICT), and energy efficient technologies³⁵.

SFI’s stated mission is to “help build in Ireland research of globally recognised excellence and nationally significant economic importance through strategic investments in the people, ideas and partnerships essential to outstanding research in strategic areas.” Specific functions in this regard include:

- Promoting, developing and assisting the carrying out of oriented basic research in strategic areas of scientific endeavour particularly in the fields of biotechnology, ICT, and sustainable energy;
- Endeavouring to ensure that a standard of excellence in the oriented basic research, as measured by competitive peer review on an international basis, is consistently adhered to at the highest level;
- Developing and extending the national capability for the carrying out of oriented basic research in institutions;

³⁵ SFI was established in 2000, as a sub-board of Forfás, to administer Ireland’s Technology Foresight Fund. In July 2003, SFI was established on a statutory basis under the Industrial Development (Science Foundation Ireland) Act, 2003. SFI’s remit was extended in 2008 to include energy. SFI does not have a specific regional development (or spatially driven) mandate and its activities are guided by the overriding objective to develop and support research excellence

- Promoting the attraction of world class research teams and individuals with a view to their carrying out oriented basic research in the State;
- Cooperating and collaborating with other statutory bodies in the promotion and encouragement of oriented basic research; and
- Devising, administering, allocating, monitoring and evaluating any grants, schemes and other financial facilities requiring disbursement of any funds authorised from time to time by the Minister with the concurrence of the Minister for Finance.

County Enterprise Boards (CEBs)

The west has four CEBs which support the start-up & development of local business in Ireland. Supports include advice, mentoring & grants or financial supports for training and growth (as a guideline, the CEBs deal with client companies that employ less than 10 people). Through the CEB Co-ordination Unit based in EI regional headquarters in Shannon, the CEBs are developing a closer working relationship with EI, through for example the extension of the EI First Flight programme to eligible CEB clients ready to begin exporting or already exporting overseas and the EnterpriseSTART initiative (see above).

Integrated Local Development Companies

In 2007, more coherent arrangements were put in place to have one integrated local development company providing a single access point for local communities. These local development bodies are responsible for the disbursement of significant public funds under a wide range of programmes in the NDP, including the Local Development Social Inclusion programme and LEADER and provide a range of enterprise supports to SMEs and start-up businesses. The following groups are active in the West region:

- Comhar na Oileáin Teo
- Forum
- Galway Rural Development Company
- Mayo North East LEADER
- Roscommon Integrated Local Development Body
- South West mayo Development
- Galway City Partnership

FÁS

FÁS is the National Training and Employment Authority and provides training courses, apprenticeship programmes and re-skilling/supports. FÁS' Corporate Strategy sets out the strategic direction taken by the Authority and outlines the action that it will take to progress the Strategy under eight High Priority Goals. These Goals cover areas such as services for jobseekers and the unemployed, workforce development, labour market policy, social inclusion, equality and diversity, and customer service. FÁS has six employment services offices across the West, and two Regional Training Centres (Galway and Ballina).

Fáilte Ireland

Fáilte Ireland has three principal areas of operation, it:

- Helps to develop product offerings for both the domestic and overseas markets and leads the marketing effort to promote Irish holidays to the domestic consumer
- Supports enterprise development in Irish tourism, promoting best practice in operations, quality and standards and facilitating investment in tourism infrastructure.
- Builds human resource capability in the industry, investing in training provision and standards across the publicly supported educational system, through a training network of outreach centres and also via an executive and management development programmes for the tourism industry.

Regional support for people and enterprises is provided at a local level through the office of the Business Development Manager in line with the key strategic themes identified in each region's operational plan.

Skillnets

Skillnets provides industry specific training programmes to employees of networks of firms, based on their defined needs. They primarily facilitate an enterprise-led approach to training and development and also aim to address the lack of investment in Human Resource Development by business by tackling some of the real and perceived barriers to training. Skillnets is funded under the National Training Fund through the DETE.

Appendix 2

Business & Technological Parks and Properties

The availability of a choice of high quality property solutions to a potential investor or start-up company is essential. It is key to stimulating enterprise investment, concentration and well-planned structured growth within a region.

Such assets need to be regularly enhanced and strengthened in order to meet changing business needs. Below is a list of IDA Business and Technology Parks in the West.

Castlebar Business and Technology Park

Castlebar Business & Technology Park is an 8-hectare (20 acre) park located on the N60 Castlebar to Athlone route. The park boasts a high standard of landscaping and a services infrastructure available to suit the requirements of both international services and manufacturing clients. The masterplan includes building designs and greenfield areas for future development

Westport Business & Technology Park

Westport Business & Technology Park is a 15-hectare (38 acre) park located on the main N5 Westport to Castlebar route. The park has been designed to a high standard to include a services infrastructure and landscaping to suit both manufacturing and international services sectors. The site boasts existing designs for advanced technology buildings and high specification office facilities as well as greenfield areas for future development.

Roscommon Business and Technology Park

Roscommon Business and Technology Park is an 8 hectare (20 acre) park located on the N60 Roscommon to Athlone national route. The park has been designed and landscaped to a high standard including a services infrastructure to suit both manufacturing and international services sectors. The existing advanced office facilities have been designed to a high specification and there are greenfield areas available for future development.

Tuam Business and Technology Park

Tuam Business Park is an 11-hectare (27 acre) business park located on the N83 national primary route, 2km from Tuam town centre. The park boasts high quality designs for advanced office facilities and advanced technology buildings to suit both manufacturing and internationally traded services clients. The park has been landscaped to a high standard and has adequate greenfield areas for future development.

Ballinasloe Business & Technology Park

Ballinasloe Business & Tecnology Park is a 13 hectare (32 acre) park located in the town of Ballinasloe. The site boasts existing designs for advanced technology buildings and high specification office facilities to suit both manufacturing and internationally traded services clients. The services infrastructure has been developed to suit all client requirements and allow for further development of the greenfield areas on the park.

Parkmore Business & Technology Park, Galway

Parkmore Business & Technology Park is a 38 hectare (94 acre) park located just off the Galway ring road at Parkmore. The park is occupied by many high end manufacturing and international services clients and continues to grow.

The park has been designed and landscaped to a high standard including a services infrastructure to suit further investment in manufacturing and international services sectors. The existing advanced office facilities have been designed to a high specification and there are greenfield areas available for future development.

IDA Strategic Sites:

Oranmore, Co Galway

IDA's strategic site at Oranmore, Co Galway is an approximately 27 hectare (67 acre) site situated along the N18 national primary route. This site has been fully serviced and landscaped and is available for immediate occupation. In October 2005, IDA obtained a 10 year planning permission for a significant Biopharmaceutical Manufacturing Campus for this site.

Athenry, Co. Galway

IDA's strategic site at Athenry, Co Galway is a 97 hectare (239.6 acre) site situated close to the new M6 Dublin to Galway motorway.

