

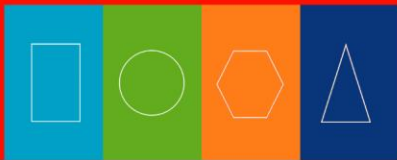
Addressing the Demand for Skills in the Freight Transport, Distribution and Logistics Sector in Ireland 2015-2020

February 2015



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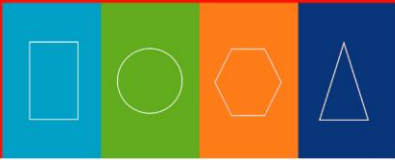


Acknowledgements

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The EGFSN Secretariat would like to thank the many industry executives, academics and staff at expert organisations and State Agencies who gave their valuable time and insights through interviews and at workshops.

The EGFSN Secretariat would like to acknowledge the high quality and expertise of AECOM Limited whose work included the literature review, the undertaking of the consultations and workshops with both companies and key informants and the modelling of the skills demand forecasts for Ireland contained in the report as well as the integration of the various research element into the report.

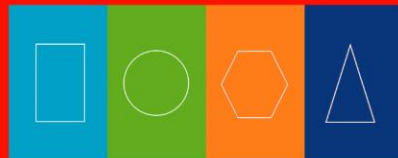


Introduction to the Expert Group on Future Skills Needs

The Expert Group on Future Skills Needs (EGFSN) advises the Irish Government on current and future skills needs of the economy and on other labour market issues that impact on Ireland's enterprise and employment growth. It has a central role in ensuring that labour market needs for skilled workers are anticipated and met.

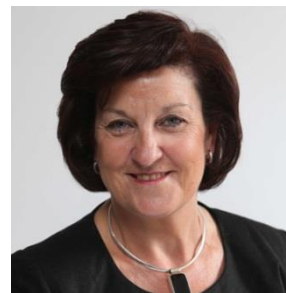
Established in 1997, the EGFSN reports to the Minister for Education and Skills and the Minister for Jobs, Enterprise and Innovation.

The Strategic Policy Division within the Department of Jobs, Enterprise and Innovation in conjunction with the Skills and Labour Market Research Unit, SOLAS, provides the EGFSN with research and analysis support.



Foreword

The open nature of the Irish economy with high levels of trade combined with our geographical peripheral location means that achieving excellence in freight transport, distribution and logistics (FTDL) is vital for our competitiveness. The key aim of this report is to ensure the FTDL sector will have the right skills base to meet the skills challenges and opportunities identified up to 2020.

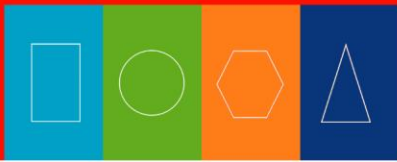


Overall, research feedback has shown that the FTDL sector is a vital component of the Irish economy. A key strength of the sector is its ability to provide expertise related to multi-modal freight transport - air, road, sea and rail. Enterprise respondents view the outlook for the sector generally positive, with employment growth anticipated. Within firms, skills need to be nurtured and developed through improved provision of training and the support of lifelong learning. There is need for the development of career paths for lower skilled workers. In order to meet the demand for skilled workers, the relatively poor image of the FTDL sector needs to be improved.

The demand forecast analysis in this report has found that, due to an anticipated expansion in the sector and the replacement demand for those employed in core FTDL occupations that some 13,500 to 15,500 job vacancies could become available over the period 2015-2020. In terms of recruitment, the main anticipated skills impediment is for HGV drivers with the required licence. There is demand for more graduate level entrants to ensure a future provision of managers, planners and associated office workers with adequate skills. Warehouse roles in demand include warehouse managers, fork lift operators, order pickers, and warehouse operatives.

I would like to express my thanks to all those who contributed to the report. Particular thanks are due to the many industry executives, academics and professionals who contributed their valuable time and expertise. I would like to thank Pat Ivory who chaired the Steering Group that oversaw the completion of the report and to each member of the Steering group for their commitment and sharing of expertise. Finally, I would like to thank the EGFSN Secretariat for their research and analysis input and managing this project to a successful conclusion.

Una Halligan
Chairperson, Expert Group on Future Skills Needs



Executive Summary

The aim of the study is to assess the skills and competency requirements for Freight Transport, Distribution and Logistics (FTDL) activities in Ireland up to 2020, and to propose recommendations that will ensure Ireland has the right skill base to meet enterprise needs. The approach adopts a holistic skills assessment of Ireland's logistics infrastructure for facilitating international trade and domestic freight distribution - by air, sea, road and rail. It assesses talent needs at all levels of educational attainment, including further education and training (FET) as well as higher education. This includes the identification of development and career progression opportunities for persons at lower skill levels for job openings arising from anticipated expansion and replacement demand.

The approach taken has been to forecast skill demand for occupations that form the core employment in Freight Transport, Distribution and Logistics. Employment in these occupations is spread across a range of sectors in the economy, including transportation and storage, retail and wholesale trade, manufacturing and construction. The advantage of adopting this approach is that the total demand for all those who work in FTDL occupations is included in the analysis, not only that arising within the FTDL sector. Implicit in this approach is the assumption that FTDL skills for any given occupation are transferable between industry sectors. There were an estimated 47,200 persons employed in such core FTDL occupations in 2014.¹

As freight-orientated companies become more logistics orientated they need to provide a better service - and for that they need skilled staff. Logistics is in operation 24 hours a day, seven days a week and supports all sectors across the economy both in terms of facilitating international trade and the movement of freight domestically. Logistics is a process of planning, implementation and control of the physical movement of products and information flow to and from each segment of the supply chain.² This includes the handling and storage of raw materials, semi-finished and finished products, from point of origin to the end consumer in the most efficient and effective way possible.

E.1 Methodology

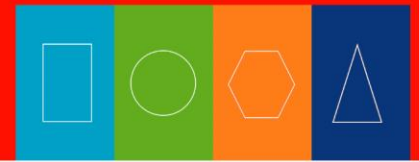
The research and analysis work for the study was managed by the Secretariat to the Expert Group on Future Skills Needs and its progress was overseen by a Steering Group made up of industry representatives, education bodies and relevant agencies, including SOLAS, Higher Education Authority, IDA Ireland and Enterprise Ireland.

Capturing the views of employers and key stakeholders is critical to understanding current FTDL sector trends and future developments. To this end, a broad-based consultation exercise was undertaken involving enterprises and key informant consultations, workshops and corroborative secondary research. This research work comprised:

- A Literature Review of relevant international and domestic literature;
- Structured interviews with 40 FTDL enterprises representative of the various modes - road, air, rail and sea in their role as employers of those in the sector;

¹ As well as these core FTDL roles, there are other logistics support roles, fewer in number, which are identified in this research study, such as HGV vehicle maintenance fitters, technicians and mechanics; specialist technicians e.g. refrigerated vehicles / warehouses; IT support - general and software specific; other quality experts; human resources.

² For the purpose of this study the supply chain activities do not include the product development and manufacturing processes which are covered within the published EGFSN report "Future Skills Requirements of the Manufacturing Sector to 2020". April 2013.



- In-depth interviews with 28 key informants/stakeholders, including FTDL representative organisations, education and training bodies and relevant state agencies;
- Three sector focused workshops (two in Dublin and one in Cork) with participation from 40 stakeholders including road haulage operators, those involved in air freight, sea freight, education and training providers, manufacturing and FTDL associations; and
- A skills demand forecasting exercise to determine the future labour demand and the extent of potential job vacancy opportunities arising within the FTDL sector in the years to 2020.
- The process also benefitted from the valuable input into the research and drafting of the recommendations from the members of the Steering Group at several meetings.

Enterprises surveyed were involved in the movement of a wide variety of freight goods. While some companies specialised in the transportation of a particular product such as oil, others were engaged in the transportation of a wide range of products.

The typology of companies covered in the research includes:

- Third Party Logistics Providers (3PL's) - many companies who move goods internationally outsource some or all of the management of their logistics services to such providers;
- Internationally orientated road freight transport companies;
- Large Irish food companies who undertake their own international logistics in order to ensure the security and consistency of their supply chain;
- Large domestic Retail Multiple Groups who undertake their own logistics and warehousing activities;
- Operators engaged in intermodality and co-modality logistics activities - such hub cargo handling activities facilitate the timely and efficient outward and inward freight movement;
- Consultancy firms which provide logistics services as a major part of their business activity;
- Public Bodies providing a service related to ensuring efficient international trade logistics.

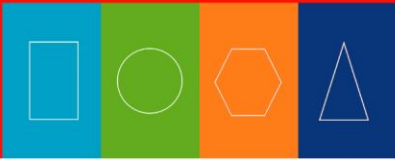
E.2 Drivers of Change

There are several global and domestic drivers of change impacting on the skills and talent demand of the FTDL sector which have been highlighted in international and domestic literature as follows:

International

Technological Change

Technological change is having a major impact on the skills requirements in the FTDL sector. Responding to the changing logistics objective (from cost-orientated to customer-orientated), the focus of technological innovation is moving towards helping companies meet higher customer requirements and adding more value to their services. This innovation includes the automation of warehousing activities, Radio-frequency identification (RFID), Real time location systems (RTLS) and in-cab technology, including computer assisted support of vehicle drivers. There is an increasing demand from customers for real time information on the location of their consignments. Third party logistic providers are evolving into technology providers with their own software. Many large cargo



ports operate mostly autonomously with people mainly working in planning, controlling and programming roles.

Sustainability Agenda

Manufacturers and retailers are increasingly asking their FTDL operators to demonstrate that the transport of their goods is being done safely and with a low CO₂ footprint. More stringent EU regulations and consumer concern about CO₂ emissions are increasing pressure on the FTDL sector to become more sustainable. This is encouraging logistics companies to invest in eco-friendly technologies including the use of electric vehicles, improved vehicle emission technology, and the use of compressed natural gas for freight movement. This movement towards more energy efficient freight transport is resulting in demand for skills areas such as logistics planning, carbon reporting and the 'greening' of operations.

Regulatory Requirements

There are EU requirements governing the movement of products. For example, EU directives for the distribution of medicinal products provide the authority to companies, who can meet the requirements, to manufacture and/or distribute health products in a country. The EU has introduced a set of uniform rules to ensure fair completion among road freight users. These include regulations on HGV safety, level of HGV driver's professional competence, the maximum length of time HGV drivers can drive, tighter controls on the movement of dangerous goods, and cabotage rules which allow a haulier from one country to transport goods within another country on a temporary basis when making international deliveries.

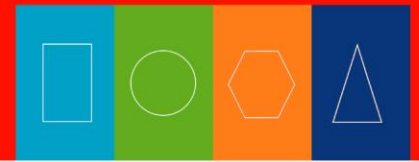
Move towards the Centralised Management of the Supply Chain in a single location

Increasingly, organisations are seeking to consolidate the management of their supply chain in a single location in response to more complex arrangements and demand for greater efficiencies. Centralised supply chain management occurs in countries that have expertise in distribution and logistics and usually in mature freight markets. It can facilitate the movement of goods that do not travel through (or anywhere near) the country from which the supply chain is being managed. Growth in this area will require an increase in higher end skills in the FTDL sector and supporting skills such as global supply chain management, software development, contract law, and finance.

Domestic

Open Nature of the Irish Economy

The open nature of the Irish economy, with high levels of trade (exports and imports), combined with Ireland's geographical peripheral location means that achieving excellence in freight transport and logistics is vital for enterprise competitiveness and for attracting inward investment. Access to markets is a main factor for companies in deciding where to locate. The FTDL sector is an important enabler of economic growth. Around 80% of Irish manufactured output is exported, including much of the output of the 1,000 multi-national companies (MNCs) located here. Companies often have



complex supply chains and operating them optimally is a challenging task. Freight transport comprises a significant component of the total supply-chain cost.

Ireland's Strategy for Trade, Tourism and Investment

The Government's Strategy and Action Plan for Irish Trade, Tourism and Investment to 2015 is to increase the value and diversity of indigenous exports to existing markets such as the USA, UK, Germany, and France while at the same time increasing exports to the BRICS countries and the Middle East Region. A review of this Strategy in 2014 highlighted the need to engage with high growth markets in Asia, South America and Africa. The implementation of the strategy will impact on FTDL skills requirements. For example, customs procedures are complex and constantly evolving, even for established markets. Emerging markets requirements can be more intricate, which makes skills in this sector vital for the efficient movement of goods to and from these countries.

Cost Competitiveness

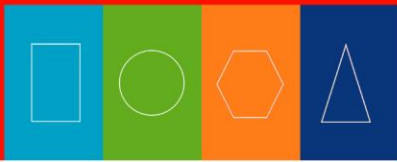
Since the economic downturn in 2008 there have been efforts by those in the supply chain to reduce costs, in order to compete on price. Similarly there has been pressure from producers to maintain profitability by reducing costs. As such 'lean' skills (e.g. solutions to waste) have become important. This has led to the emergence of a 'leaner' sub-sector, with a focus on price (although this may be at the expense of optimising the efficiency and effectiveness of the supply chain). As a result the role of finance and the associated skills requirements have become more important in the sector, with margin erosion now a key factor in the industry over the last 5 years.

Consolidation of Key Players in the FTDL Sector

Mergers and acquisitions in the sector and the emergence of MNCs have led to a consolidation of key players in the industry. Although SMEs still perform a vital function in the sector, this consolidation and resultant economies of scale offers an opportunity to create improved career pathways and a greater focus on structured training and education.

Poor Career Image of the FTDL Sector

The sector suffers from a low profile, with little public knowledge of how it operates and opportunities for careers associated with it, making it more difficult to attract and retain talent. This can be attributed in part to a lack of marketing of careers in the sector and the services it offers, aside from large companies that have their own strong brand recognition. Knowledge of careers in the sector is often restricted to awareness of more traditional roles such as HGV drivers. This is despite the fact that the sector offers varied and relatively well paid professional career opportunities.



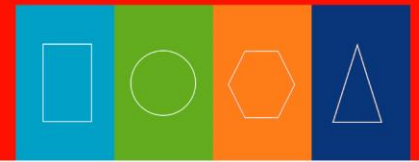
E.3 Profile of Companies in the Sector

Given that Ireland is an island, it requires expertise in facilitating a multi-modal supply chain incorporating sea, road, rail and air freight. In many cases, particularly for the export and import of freight, a combination of these modes is utilised. The sector is well represented by a significant number of bodies such as the Freight Transport Association, Irish Road Haulage Association, Chartered Institute of Logistics and Transport, Irish Exporters Association, Irish International Freight Association (IIFA), and various Chambers of Commerce amongst others. There are a range of roles in the sector from lower skilled to management-level. The required skills and experience for similar roles in different FTDL sub-sectors vary. For example, the skills and equipment used by a stevedore for loading ships are different from those used by a warehouse operative for loading HGVs, despite the similar nature of the role. Demand for less traditional FTDL roles is being driven by the presence of multi-national corporations, and the requirement for professionals to interact with other departments.

In the past, the freight, logistics and distribution sector has been typified by SMEs providing services locally and nationally. Now, large MNCs and several large domestic companies are key players in the sector. Larger enterprises are more likely to employ individuals associated with support services. Organisations may be third party logistics companies (3PL's), while others can be a mixture of logistics and warehousing (such as large domestic retail distributors); or be a combination of own account operators, hazardous goods specialists, warehousing operators, and cold chain distributors. Other types of operations employing relevant FTDL roles include freight forwarders, port operators, airfreight operators and rail operators.

Road Freight

Road freight is the most common means of transporting freight in Ireland. The Irish road freight sector is served by a combination of well-known MNCs and large domestic providers as well as many smaller operators, some of which are focused on specific industry sectors. Enterprises that are focused on business activities such as food companies and multiple retailers often have their own in-house road freight operation in order to ensure a quality and consistency of supply to their customers. It is highly competitive with many road haulage operators competing for loads. A Road Haulage Operator's Licence issued by the Department of the Transport is required where goods are carried for hire or reward in a vehicle or combination of vehicles which is in excess of 3.5 metric tonnes. Road Haulage is resource intensive, both in terms of fuel and labour. EU legislation regulates areas such as the length of time a driver can operate a vehicle for, the professionalism of the industry via the requirement for an operating licence and the types of vehicle used in the industry. Irish hauliers operate throughout Europe, often using the UK as a landbridge. In this regard, Ireland's road haulage sector record in terms of HGV vehicle compliance check standards in



the UK needs improvement.³ HGV drivers may work locally, nationally or long journey. Some may work with dangerous hazardous loads (i.e. chemicals or LPG) or extremely large loads and require extra training and/or licences. Others may work transporting livestock, perishable products or with refrigerated container loads. Depending upon variances, there are requirements for dealing with invoices/paperwork, making multiple drops, compliance with various speed and load limits and hours of driving; and knowledge required of care and maintenance of the vehicle, loading and unloading the vehicle, calculating laden weights, using tachograph and fuel efficiency road driving. Road haulage is supported by several non-driving roles including mechanics and transport planners.

Air Freight

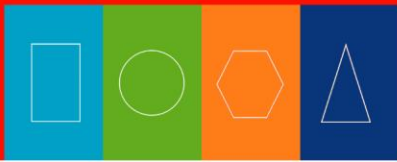
Air Freight in Ireland accounts for only 1% of freight tonnage by volume but about 35% of the value of all freight into and out of Ireland - mainly high value foodstuffs (such as organic fruit and seafood products), pharmaceutical, medical devices and IT components. Most of Ireland's international freight is carried in the hold of passenger aircraft. However, not all carriers provide a freight service, which means that there is less choice in terms of frequency and range of locations served by air freight services, than for passenger services. Dedicated air freighters are an important and growing part of the international air freight business. There is considerable scope to enhance Ireland's export competitiveness through better air freight provision, which would help to shorten supply chains and reduce time to market. Access to a choice of competitively priced and frequent air freight services to a range of short haul and long haul destinations in existing and emerging markets is critical. Industries that use air freight are at the higher end of the value added spectrum, (such as life sciences, ICT and pharmaceuticals). Long-term global forecasts for the international air freight point to a continued strong growth. Given the potential risks associated with transporting goods via air freight, knowledge of security and the aviation environment are key skills requirements for those working in aviation warehouses. Salaries in the air freight sector are higher than for other FTDL areas while barriers to entry are high, with experience in the sector much sought after. Training in the sector is often provided in house, although courses are provided by the International Air Transport Association (IATA) and Irish International Freight Association (IIFA). Refresher in-house training is often based online, which is less costly than face-to-face training. Training for those in lower skilled positions is often specific to the equipment that is being used.

Sea Freight

Dublin is Ireland's most important port for both exports and imports. In 2012, 42% of all merchandise moved by sea was handled by Dublin, 21% by Shannon Foynes and 18% by Cork.⁴ One of

³ Irish HGV compliance checked vehicles had a 31% defect rating compared for example to 18% for German and French compliance checked HGV vehicles; Source: Non-National HGV Vehicle Compliance checks 2013/14, UK Department of Transport, Oct 2014.

⁴ Transport Omnibus, November 2013.



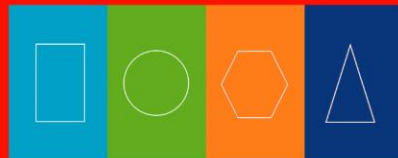
the key growth sectors is the food sector which is likely to lead to an increase in sea freight volumes over the period to 2020. Ten of the eleven ports in Ireland have reported increases in tonnage shipped in 2013 compared to 2012 as growth began to return to the economy. In order to facilitate a trend towards larger vessels and deeper water services, and maintain international standards there will be an increased demand for pilots, crew and captains, as well as for greater freight handling capacity at ports. A number of ports, including Dublin and Shannon Foynes have the potential to provide deeper water services. There are various roles associated with port operations to ensure that goods are safely and efficiently loaded and unloaded onto ships and stored whilst awaiting onward transportation. The type of goods a port handles reflects the skills requirements of the associated employees, for example ports that handle containers or bulk goods. Health and Safety training is vital for those working in a port given the hazardous nature of the environment. There are moves to encourage greater flexibility amongst port employees and as such ports are training staff to be able to work across a number of roles.

Rail Freight

Rail freight is responsible for 1% of all freight goods transported in Ireland. Although rail freight has been in decline (Iarnród Éireann transported 567,000 tonnes of freight in 2012, a fall of 7.2% when compared to 2011), there are plans to encourage greater use of this more sustainable mode (Iarnród Éireann has an aspiration to grow the rail freight business to represent 4-5% of the total freight market). Goods transported by rail include raw materials such as ore and zinc, forestry products and consignments associated with the food and drink sector. The skills needed to facilitate this will be, like elsewhere, mostly related to ICT as most planning and management activities will be computer-based. The greater use of the network and the need for efficiencies to improve intensity of use will also call for greater analytical capabilities from managers and planners.

Warehousing

Warehousing is, along with Road Freight operations, one of the key employers in the sector. The supply chain often requires the storage of goods and materials where they cannot be transported in a single trip from factory to customer. Increasingly “added value” operations take place in warehouses, such as branding, pricing and merchandising of stock in readiness for final delivery to the customer. A warehouse supervisor needs detailed knowledge of operating tasks along with significant management skills. Their role is critical to the performance of the logistics and warehouse operation. Operations skills in warehouse handling, dangerous goods acceptance, pharmaceuticals handling, forklift truck driving and security screening (with regards to air freight) are all required in various fields.

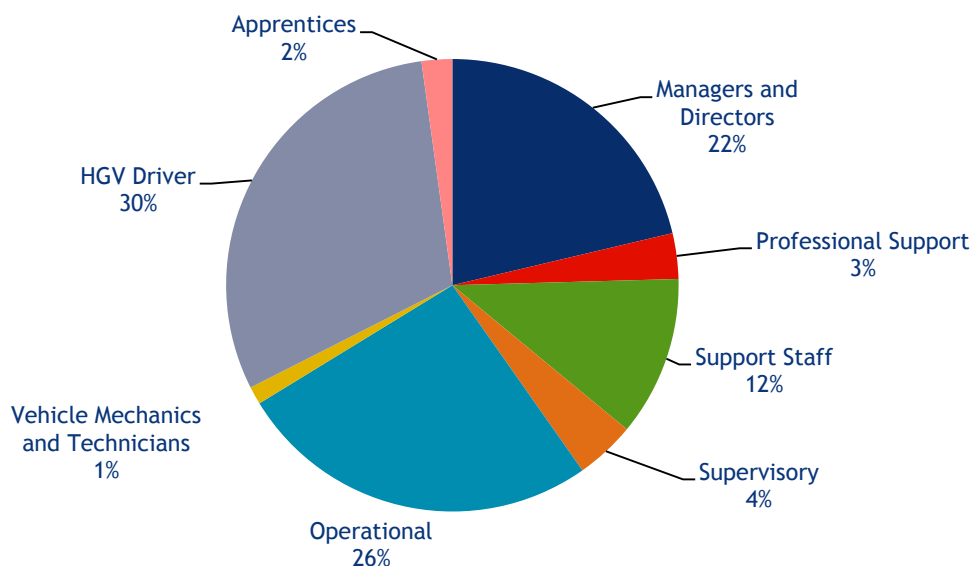


E. 4 Findings from the Consultations

Company Consultations

Figure E1 presents an outline of the reported staff employed by role in the 40 companies surveyed. Half of these were either HGV drivers (30%) or in operational roles (26%).

Figure E1: Staff Employed by Role within the 40 Companies Surveyed

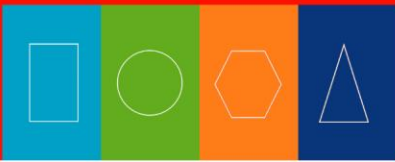


Source: AECOM, 2014

The age profile of various roles shows that a large proportion of managers and directors, supervisors and HGV drivers are aged over 45 years. This is not a particular cause for concern for managerial or supervisory roles as these are typically roles where individuals are promoted or employed in later life as they gain skills and experience. For the HGV driver role however this statistic is a cause for concern, requiring urgent attention. This is representative of the European wide situation whereby more HGV drivers are exiting the industry than entering it. Enterprise respondents were positive about future employee growth potential. Eighty-five percent of respondents anticipated that their staff numbers would increase over the next five years (with over half of respondents believing that staff levels would increase by up to 10% while further estimations varied between +11% and +51%), with no respondents anticipated a decline in staffing. This data is positive for both the sector and the wider economy as it infers the creation of new jobs and growth of industry.

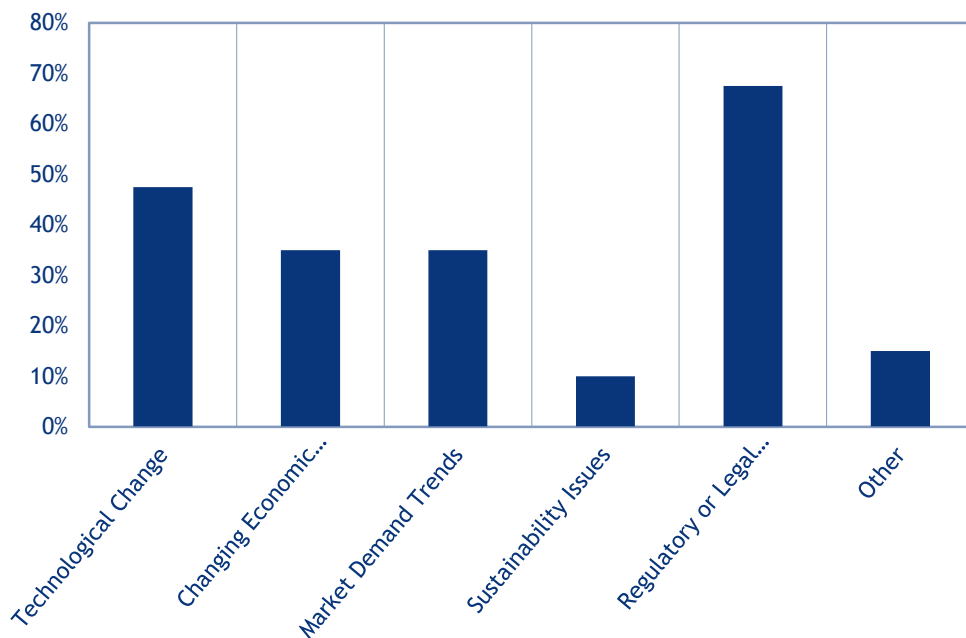
Companies Views of Key Trends and Drivers impacting on Skills Demand

Two thirds of companies surveyed indicated that regulatory and legal requirements are the biggest driver of change for the sector. This can be attributed in part to the impact of EU regulations particularly with regard to road freight. In addition, technological change; the changing economic outlook; and market demand trends were also seen as significant drivers of change by respondents. Technology has long driven skills requirements in the sector, with the increasing automation of



warehousing, use and sophistication of IT, Radio-frequency identification, Real time location systems and in-cab technology some of the recent initiatives. In rail freight there has been investment in track and associated telecoms. There is an increasing demand from customers for up-to-the minute information on their consignments. The greater use of data analytics throughout the supply chain affects all modes, and is encouraging organisations to offer track and trace facilities. For example, in retail distribution there is a target of achieving 98% “on shelf availability” of products in stores (otherwise customers may choose a different brand, or shop elsewhere). A common response from companies was that many of those who work in the sector, particularly at entry level positions lack basic IT skills. These skill-sets enable skilled workers to progress to more senior positions in the organisation. Third party logistic providers are evolving into technology providers with their own software. The changing economic outlook and market demand trends (often linked) were both given as drivers by over one third of respondents. In terms of sustainability, it is fair to suggest that the economic downturn that began in 2008 has had a negative effect on the sustainability agenda in the FTDL sector. It is expected that the sustainability agenda will increase in importance as the economic situation continues to improve and that this will increase demand for skills in areas such as carbon reporting and the ‘greening’ of operations.

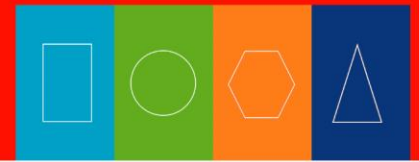
Figure E 2: Drivers of Change affecting Skill Requirements- % of Companies Surveyed



Source: AECOM, 2014

Companies surveyed were asked where they hire new employees from and if there were any particular skills or qualifications which they require for specific roles. Main responses were:

- **Managerial Roles:** experience and leadership were given as the most important skills. Respondents stated that managerial roles were often filled by existing employees, or through



business networking or agencies or made use of the professional networking website LinkedIn. Several companies said that they look for candidates with a diploma in logistics.

- Operational Roles: previous experience, computer literacy and people skills were stated as skills sought by companies for operational roles. Respondents stated that they use recruitment agencies and former FÁS Employment Services (now Intreo) to fill operational vacancies.
- HGV Driver with the relevant licence (e.g. C, C1, C+E, C1+E) and a clean licence without penalties. Other skills or requirements for HGV drivers included Certificate of Professional Competence (CPC) training, Transporting Hazardous Goods by Road (ADR) training and good references. Respondents stated that HGV Driver roles are often filled by word of mouth, although agencies and the former FÁS Employment Services (now Intero) were also used.
- Other skills that respondents are looking for included: manual handling training, food training, experience using equipment and specific air freight experience. Several respondents reported that this training was delivered internally.

Larger organisations are more likely to employ staff associated with support services roles and have their own in-house training or 'knowledge centres'. As such progression and training is likely to be of a higher standard than that in smaller organisations. The development of 'progression stairways' linked to a skills and training plan are more often provided in companies that employ significant numbers of FTDL staff. There is a disparity between the training and progression 'offer' at MNCs and SMEs. Where SMEs do perform training this is likely to be undertaken by an in-house trainer, often a manager or supervisor. Such training is often focused on role-specific or essential training such as Health and Safety courses. Companies were asked to identify particular job roles for which they experienced difficulty recruiting for. As previously mentioned, HGV drivers and operational roles represent over half of those employed in the sector. Therefore it is concerning that 18% of respondents reported difficulty recruiting HGV drivers with the required licence (e.g. C, C1, C+E, C1+E) and 12% reported difficulty recruiting for operations roles. At present there is widespread use of supervisors/managers, internal instructors and local training providers for staff training which is typically delivered 'on the job'. Larger organisations with their own training centres are more likely to undertake in-house training than SMEs who tend to utilise local training providers. Three quarters of companies interviewed indicated that they were satisfied with the level of training currently provided. Reasons given for dissatisfaction included a lack of consistency and standards; not enough job specific training suited to particular FTDL roles; and a need for better delivery options. Education providers were not widely used by respondents for the upskilling of their staff.

Key Informant Consultations

Key strengths of the sector outlined in the key informant interviews and workshops are its ability to provide expertise relating to multi-modal freight to support other sectors of the economy and to achieve a high level of compliance with EU regulations. Tables E1 and E2 outline opportunities and threats identified by key informants which could affect the demand for skills over the period 2014-2020 and the potential outcomes that might result from them.

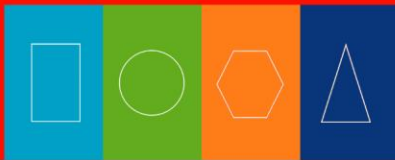


Table E1: Potential Opportunities which could affect the demand for skills (2015-2020)

Opportunities	Economic Growth	Growing sustainability agenda	Enhanced roles for women	Low Cost Air Freight Model	Technological change	Ireland becoming a global East - West link for airfreight	Apprenticeship Scheme HGV Driver
Potential Outcome	Increased demand for skills within the sector across all modes of freight transport and skill levels.	Increased demand for skills in the area of carbon reporting and “greening” operations within companies.	Increased available workforce Supply.	Shift towards air freight - knowledge of the aviation environment are key aviation warehousing skills.	IT Skills and training needs arising across all grades including application of data analytics.	Increased demand for air freight skills and global supply chain management and customs skills.	Increased numbers of HGV drivers with relevant licence (e.g. C, C1,C+E, C1+E) coming into the sector.

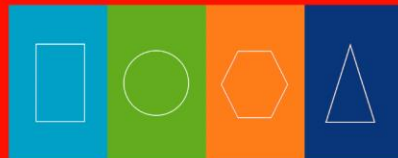
Source: AECOM

Table E2: Potential Threats which could affect the demand for skills (2015-2020)

Threats	Potential negative Legislation change	Resistance to work practices innovation	Low Economic Growth	Lack of suitable trainers to upskill staff	Declining company investment in upskilling	Lack of HGV drivers with the required licence.
Potential Outcomes	For example , changes in cabotage rules ⁵ could theoretically, reduce demand for domestic road hauliers vis a vis international competitors.	Sector would become less productive and less competitive	Lack of demand for FTDL employees across all modes and skill levels.	Poor quality and ineffective training preventing sufficient up skilling.	Lower level of upskilling. Companies only commit to mandatory training requirements.	Competition for qualified HGV drivers across Europe. Wider negative impact on economy.

Source: AECOM 2014

⁵ The peripheral location of Ireland means it is less subject to competition from cheaper Eastern European hauliers than countries such as Germany and the Netherlands. This is theoretically limited within Ireland by EU cabotage rules, which restricts foreign hauliers to three cabotage operations within a seven day period starting the day after unloading of international transport.



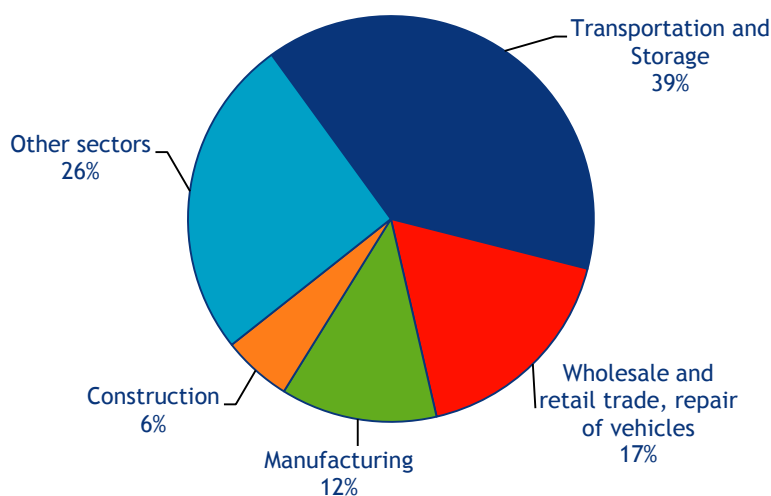
E.5 Demand Scenario Analysis

The purpose of the demand scenarios analysis is to forecast future FTDL workforce demand and determine the level of potential job vacancies arising in the FTDL sector in the years to 2020.

Forecast Methodology

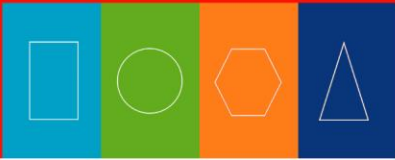
Two labour demand scenarios were estimated based on higher and less optimistic economic outlooks. The economic scenarios used are those forecast by the ESRI in 2013.⁶ These labour demand scenarios, along with an estimate of required replacement demand, were utilised to forecast demand up to 2020 and the number of potential vacancies that could arise. The approach adopted was to forecast skill demand for those occupations that form the core employment in FTDL. Employment in these occupations is spread across a range of industry sectors, including transport, retail and wholesale trade, construction and other sectors. The advantage of this approach is that all those who work in core freight, distribution and logistics occupations, not only those within the FTDL sector, are included in the demand forecasts. For example, HGV drivers who are employed by manufacturers and in the retail sector are included. Implicit in this approach is the assumption that the skills for given FTDL occupations may transfer between sectors. Thus, there is a single pool of labour from which employees and skills can be drawn. Figure E 3 shows the sectoral breakdown of the FTDL-14 occupations as sourced from the 2011 Census.

Figure E3: Sectoral Breakdown of core FTDL-14 Occupations



Source: CSO

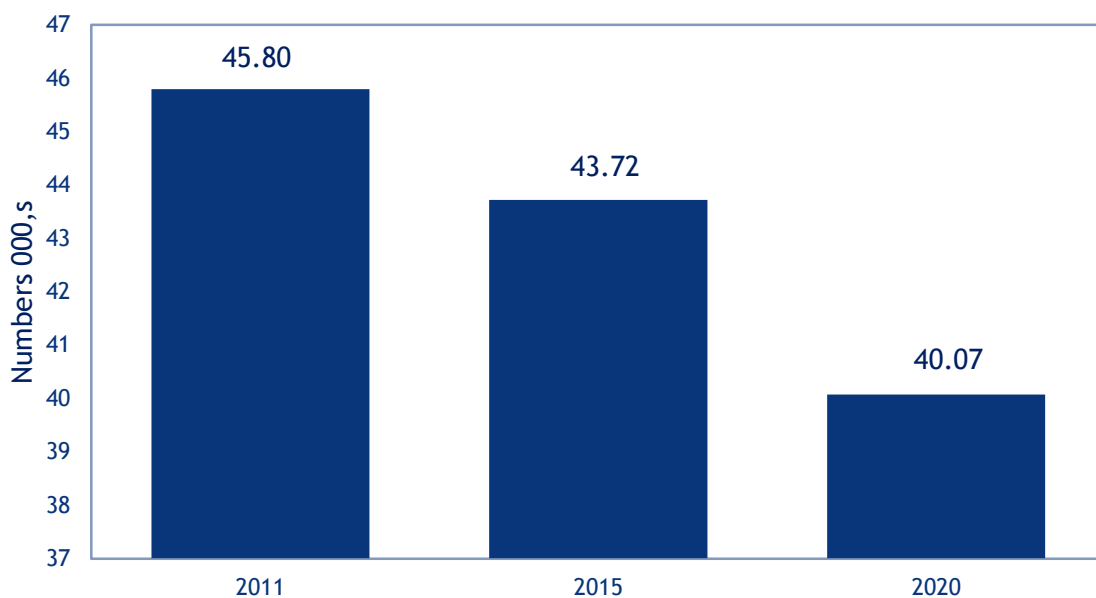
⁶ Medium Term Review: 2013-2020 10/07/2013 By John FitzGerald and Ide Kearney (eds.), Adele Bergin, Thomas Conefrey (Central Bank of Ireland), David Duffy, John FitzGerald, Ide Kearney, Kevin Timoney, Nuša Žnuderl.



Replacement demand

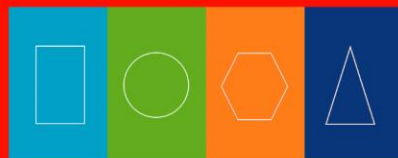
The age profile of the workforce in FTDL occupations will present a challenge for the sector in the coming years. A significant number of those currently employed are due to retire in the forecast period and these individuals will need to be replaced. An age cohort component projection, assuming a retirement age of 65, concluded that the 2011 baseline of circa 46,000 workers would decline to just over 40,000 by 2020 (see Figure E4). The change is predominantly comprised of retirements by heavy goods vehicle, mobile machine and other drivers. On the other hand, few aviation workers are due to retire. These skill demand forecasts estimate the future workforce available in the core FTDL occupations, if no new entrants were to be attracted into these occupations.

Figure E4: Projection of Core FTDL workforce (assuming no new entrants) 2011, 2015, 2020



Source: AECOM, 2014

A sufficient supply of replacement labour for positions left vacant would ensure a static total number of employees over time. However, an anticipated improved performance of the sector and the economy as a whole will mean that the number of core FTDL workers required in 2020 will exceed the number employed in the baseline. This increase in demand for core FTDL positions will generate further vacancies in the sector. Therefore, the total number of job vacancies over the forecast period is a combination of anticipated replacement demand and expansion demand for the core FTDL occupations.



Expansion demand

Two scenarios representing the change in demand for road, sea and air transport were forecast to 2020. The GDP forecasts utilised were those within the ESRI Medium Term Review, published in 2013. The economic scenarios employed in the study were:

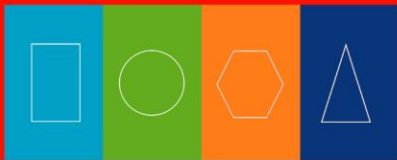
- The Recovery Scenario in which Europe and Ireland are forecast to return to a reasonable rate of growth quite quickly; and
- The Delayed Adjustment Scenario in which the European economy recovers but ongoing structural difficulties in Ireland hinder economic progress here in the short term.

The historical relationships between demand for road, sea and air transport and the wider economy (GDP) were estimated and these were then combined with the GDP forecast to generate two projections of growth in labour demand for each of the relevant occupations. These growth projections were then applied to the 2011 employment data, giving rise to core FTDL labour demand forecasts over the period to 2020 which are outlined in Table E3.

Table E3: Demand forecast by 14 Core FTDL Occupations 2015 and 2020, Recovery and Delayed Adjustment Economic Scenarios

Occupation	Baseline	Recovery Economic Scenario		Delayed Adjustment Economic Scenario	
	2011	2015	2020	2015	2020
Managers & directors in transport & distribution	3,497	3,725	4,460	3,644	4,234
Managers & directors in storage & warehousing	4,071	4,337	5,193	4,242	4,929
Aircraft pilots & flight engineers	1,622	1,771	2,276	1,718	2,117
Ship officers	623	653	747	642	719
Importers & exporters	332	354	423	346	402
Transport & distribution clerks & assistants	2,767	2,947	3,529	2,883	3,350
HGV drivers	19,758	21,047	25,201	20,586	23,920
Fork-lift truck drivers	3,074	3,275	3,921	3,203	3,722
Mobile machine drivers & operatives n.e.c.	5,426	5,780	6,921	5,653	6,569
Train & tram drivers	670	714	855	698	811
Marine & waterways transport operatives	543	569	651	560	626
Air transport operatives	1,135	1,239	1,593	1,202	1,482
Rail transport operatives	999	1,064	1,274	1,041	1,209
Other drivers & transport operatives	1,278	1,361	1,630	1,332	1,547
FTDL-14	45,795	48,836	58,676	47,749	55,636

Source: AECOM, 2014



Forecast of Potential Number of FTDL Job Vacancies (2015-2020)

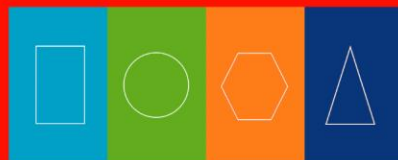
By comparing the estimated available FTDL workforce and expansion and replacement demand, it was possible to estimate the number of potential job vacancies that would become available.⁷ The forecast number of vacancies for each of the FTDL-14 occupations for the period 2015 - 2020 is set out in Table E 4. These are based on estimated growth in FTDL labour demand; replacement needs to be met due to retirements; and also a sensitivity estimate (1% per annum) of other exits from the workforce which would lead to a replacement demand, such as exits to home duties, unemployment and return to education. The analysis concluded that some 13,500 to 15,500 job vacancies in core FTDL occupations would become available over the period 2015-2020 depending on which economic forecast is applied. Job vacancies would arise for two main reasons: the performance of the sector is expected to grow (accounting for 60% of job vacancy openings) and the number of retirements/other replacement needs estimated (accounting for 40% of job openings). HGV drivers would comprise approx. 45% of the total potential vacancies under both economic scenarios.

Table E4: Potential New FTDL Job Openings Arising (2015 - 2020)

	Expansion +Replacement Demand	
	<i>Recovery</i>	<i>Delayed Adjustment</i>
HGV drivers	6,865	6,044
Mobile machine drivers and operatives n.e.c.	1,820	1,595
Managers and directors in storage and warehousing	1,259	1,090
Managers and directors in transport and distribution	1,156	1,011
Fork-lift truck drivers	968	840
Transport and distribution clerks and assistants	839	724
Aircraft pilots and flight engineers	662	557
Other drivers and transport operatives n.e.c.	461	408
Air transport operatives	453	380
Rail transport operatives	339	298
Train and tram drivers	199	171
Ship officers	183	165
Marine and waterways transport operatives	152	137
Importers and exporters	114	101
FTDL-14	15,471	13,519

Source: AECOM, 2014.

⁷ These figures do not include job churn job openings arising from the movement of workers between firms in the economy.



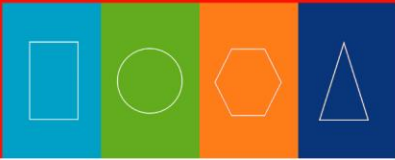
E. 6 Current domestic skills supply

There is a range of higher education providers in Ireland providing specialist education in the Freight Transport, Distribution and Logistics fields. Several offer courses producing graduates who are expected to enter the FTDL sector at management or leadership programme level. SOLAS / Education and Training Boards (ETBs) run a range of further education and training courses in this area. There are several private sector/professional body courses for the FTDL subsector and Skillsnets funded courses. There are also Springboard higher education courses in supply chain management. Relevant FTDL education and training course provision includes:

- Full time and Part-time undergraduate and Master's degree courses- Approx. 220 persons were reported graduating from such programmes in 2012, (most recent year information available);
- Springboard part-time higher education courses in supply chain management- a total of 326 places were made available over the last four years - including 50 enrolments for year 2014/15;
- Third level Online/distance FTDL learning courses - approx. 9 persons graduated in 2012;
- Private sector and professional body courses (training, diplomas, certificates and short degrees) - mainly short courses targeted at upskilling those in employment;
- ETBs training (including HGV Driver, Forklift operator and logistics and distribution and operations courses) -1,400 places on offer for such programmes for 2014; and
- SOLAS funded Momentum programme - A total of 282 places in Warehousing and logistics were approved under the Momentum programme for the long term unemployed in Sept 2014.
- Skillnets courses (aimed at long term unemployed such as Warehouse & Inventory Management). These are small in number with annual throughput is under 20 persons.

Overall, there is a range of courses provision which can be utilised for the upskilling or training of employees at all levels in the sector. Feedback at workshops suggests that there is a lack of awareness among employers and individuals of the current range of courses available.

Predicting the supply of employees into the sector based on course participation is difficult as primary research has shown that word-of-mouth referrals are a common method of recruitment, particularly for lower skilled roles. Many companies, especially larger ones, provide their own training for employees. This type of referral based recruitment means that there are few barriers to entry for lower skilled jobs, presuming roles are available. Currently, many entering managerial level and supply chain professional roles do not necessarily require a degree specifically in a supply chain or a logistics discipline. This is likely to change as companies view their logistics activities in a more strategic way in order to extract more value and efficiency from their supply chain activities. The challenge therefore is to ensure that courses offered meet the requirements of industry (e.g. customs, refrigeration technicians, supply chain knowledge at the strategic level) and that these



courses can be mapped to any prospective career pathway. This requires greater levels of communication between industry and training and education providers and a more co-ordinated approach from all stakeholders in the sector.

E.7 International Best Practice Review

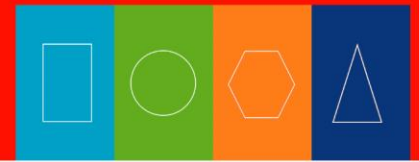
A number of other countries with successful freight sectors have introduced initiatives to address similar skills challenges as in Ireland. Several countries were reviewed in the Study. These included Germany, Netherlands, UK, Singapore and Denmark. All (except Denmark) feature in the top ten of the Logistics Performance Index (LPI) and have well established apprenticeship schemes, defined career paths, industry participation in vocational education and training and support for workplace learning. Due to factors such as geography, domestic markets, economic structure and available infrastructure, the skills requirements for the FTDL sector varies between countries. Despite this, there are several common skills development and talent attraction issues.

Germany

Transport and logistics is the third biggest sector in the German economy. Presently, there are 129 universities, technical colleges and colleges in the country which produce 11,600 logistics graduates each year. There are an extensive number of further education options employing the 'dual system' whereby on-site practical training is supported by classroom based theoretical learning. In Germany the clustering of research, training and education has been central to improvements. There has been €40m federal funding made available to the cluster since 2010 for 27 projects. Clustering in Hamburg, which is home to Europe's second largest seaport, means that there is significant provision of education of training in the region. Kuehne Logistics University, the first institution completely dedicated to logistics and Hamburg Port Training Institute are two examples of specialist training institutions in the region.

Netherlands

The Netherlands benefits greatly from its position at the entry point to three major European waterways. Combined with its excellent road and rail transport links, the country has developed into one of the major international logistics centres. The Netherlands boasts Europe's largest seaport at Rotterdam and also the third largest airport (in terms of freight transport) in the world. Logistics was identified in 2011 by the Ministry of Economic Affairs, Agriculture and Innovation as one of nine key sectors for building the economy. In order to achieve this, a campaign was launched to improve the image of the logistics sector and measures introduced to provide additional education and training. A Topsector Logistiek team was set up to ensure the Netherlands continued success as a global logistics centre in terms of research and innovation.



United Kingdom

The UK has a large transport and logistics sector. Two sector skills reports for the transport and storage and wholesale and retail sectors have been produced which identified a number of priority areas for improvement including attracting new recruits (particularly in light of the sectors image problems), producing clear career pathways, professionalising the workforce, and increasing business investment in skills development. A career development framework has been established that enables employers and employees to plan and map their career progression and to provide the basis for continuous professional development programmes.⁸

Singapore

Singapore has taken advantage of its position at the nexus of a large number of shipping lanes by constructing world class infrastructure and introducing custom handling and tax policy which encourage trade. Singapore Port is the second largest in the world (in terms of TEU volume⁹). Despite high land and labour costs relative to neighbouring countries, Singapore has the lowest cost of logistics as a proportion of total sales in the ASEAN region. This can be attributed to the educated and skilled workforce, high quality logistics services, efficient operations and excellent information systems and infrastructure. The National Productivity and Continuing Education Council endorsed a five year 'Logistics and Transportation Productivity Roadmap' which is focussed on enhancing supply chain management expertise and innovation.

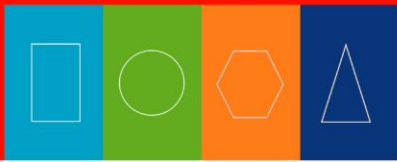
Denmark

Located between the large Central European market and Northern Europe, Denmark is well positioned to become a significant logistics hub. The country is heavily reliant on road and shipping services which account for 93% of its international freight. In 2011 the Danish Ministry of Transport identified education research and innovation as key areas of focus. Recent achievements include the offering of bachelors and masters degrees in transport and logistics and the upgrade of statutory training for HGV drivers. Denmark has developed several successful vocational training programmes which prepare young people for careers in the sector.

Overall, it is clear that many of the FTDL skills issues faced by Ireland are common in other countries. Above is a summary of relevant examples of best practice globally which Ireland can learn from to develop the skills capability of the freight transport, distribution and logistics sector.

⁸ This "Professional Development Stairway" provides six career levels for four different specialised job categories (Storage and Handling, Supply Chain, Transport, and Marine and Port operations) - available at www.thestairway.org.

⁹ Twenty Foot Equivalent Unit (TEU) - this is based on the volume of a standard sized 20 foot long intermodal container which can be easily transferred between different modes of transport.



E.8 Conclusions

Overall research has shown that the FTDL sector is of strategic and operational importance for business within Ireland across all sectors of the economy. A key strength of the sector is its ability to provide freight transport, distribution, logistics expertise related to multi-modal freight transport - air, road, sea and rail.

Enterprise respondents view the outlook for the sector generally positive, with employment growth anticipated in varying proportions. There is a need for a consistent supply of suitably trained staff, and at the same time a need to retain and upskill current employees.

Employees in the sector are recruited from a variety of sources, with word of mouth and referrals being a common method for recruiting for lower skilled operatives and HGV driving roles.

In terms of recruitment, the main anticipated skills impediment in the medium term is HGV drivers with the required licence. There is demand for more graduate level entrants to the sector to ensure a future provision of managers, planners and associated office workers with adequate skills.

Graduates need to be equipped with broad based skills such as e-skills, languages, flexibility and cultural awareness which will help to underpin Ireland's further integration into the global economy.

Warehouse roles include warehouse managers, fork lift operators, order pickers, and warehouse operatives. The increasing use of sophisticated warehouse management systems and stock control, the importance of temperature controlled warehousing for high value foodstuffs and pharmaceutical products, and the specific security aspects of aviation warehouses means that there is an increasing need for skilled warehouse staff.

Trends towards the extended use of IT and "big data" further demonstrate a need for more modern training approaches which equip the managers of tomorrow with the skills to handle data in order to improve planning and better control outcomes.

Within firms, skills need to be nurtured and developed through improved provision of training and the support of lifelong learning. As staff progress through their careers, there is a requirement for training in additional skills for both operations and management roles. There is need for the development of career paths for lower skilled workers in the FTDL sector.

In order to meet the demand for skilled workers, the relatively poor image of the FTDL sector needs to be improved. As the domestic economy continues to recover and unemployment falls, this will result in prospective entrants having a greater choice of roles available to them across a range of competing sectors. When this occurs, the relatively poor perception of the FTDL sector, may affect the ability of employers to recruit at all levels.

The demand forecast analysis has found that, due to an anticipated expansion in the sector and the replacement demand arising from the retirement/exiting of those employed in core FTDL occupations, that some 13,500 to 15,500 job vacancies could become available over the period 2015-2020 depending on which economic forecast is applied.

Job vacancies would arise for two main reasons: the performance of the sector is expected to grow (accounting for 60% of job vacancy openings) and the number of retirements/other replacement needs estimated (accounting for 40% of job openings). Heavy goods vehicle drivers would comprise approx. 45% of the total potential vacancies in both economic scenarios.



E.9 Recommendations

Introduction

In order to respond to the skills challenges and opportunities identified in this report a range of measures are needed to ensure the necessary skills are available to drive FTDL growth. There are four key strategic themes relating to skills development that determine whether logistics organisations have the capability to meet their operational demands. Generally companies will consider each element separately, although gaps in one area may have an impact on another. Figure E 5: illustrates the relationship, where all four elements need to be considered if organisations are to achieve success through optimisation of their human resources.

Figure E 5: Key Strategic themes relating to skills development within FTDL companies



Source: AECOM, 2014

This report has identified a variety of key learning points that can be shared and disseminated across the sector to help support this. It is important for companies to look specifically at their own skill needs and to fully understand the link between skills and performance. As well as core FTDL roles, this business skills strategy should include typical logistics support roles such as:

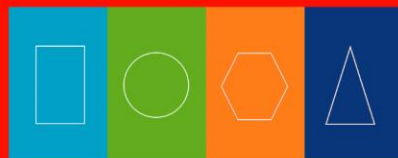
- Vehicle maintenance fitters, technicians and mechanics;
- Specialist technicians e.g. refrigerated vehicles/warehouses;
- IT support - general and software specific; and
- Other - quality experts and, human resources.

Priority Recommendations Matrix

Table E 6 presents a list of priority recommendations which address identified skills development requirements of the sector. These recommendations require buy in and support from enterprise and education and training bodies. Recommendations made are denoted by time-period for implementation: Short-term (1 to 2 years), Medium-term (2 to 3 years), and Long-term (3 to 5 years). Each recommendation denotes the Lead Partner(s) for its implementation.

Table E 6: Priority Recommendations Matrix

Recommendation	Primary /2 nd Level Education	Third Level Education	Training	Lower skilled	Management	Air Freight	Sea Freight	Rail Freight	Road Freight	Freight Forwarding
1. Develop a Freight, Distribution and Logistics Skills Engagement Group.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. Develop National Occupation Standards to create career pathways in a variety of FTDL roles.		✓	✓	✓	✓	✓	✓	✓	✓	✓
3. Develop new Apprenticeship programmes related to sector starting with HGV Drivers and Warehouse & Storage apprenticeships.		✓	✓	✓		✓	✓	✓	✓	✓
4. Develop a schools/career service communication toolkit for the sector.	✓	✓	✓	✓		✓	✓	✓	✓	✓
5. Build up SMEs management capabilities.		✓	✓		✓	✓	✓	✓	✓	✓
6. Build-up Project Management, Logistical and Procurement Skills.		✓	✓		✓	✓	✓	✓	✓	✓
7. Improve training provision for Freight Forwarders and Customs Brokers.		✓	✓	✓		✓	✓	✓	✓	✓
8. Introduce sector specific IT user courses at all levels from lower skilled to management level.			✓	✓	✓	✓	✓	✓	✓	✓
9. Develop 'soft skills' courses aimed at management-level. Integrate into training/education provision at all levels particularly lower skilled.		✓	✓	✓	✓	✓	✓	✓	✓	✓
10. Develop a Lead Centre for the provision of third-level FTDL Education Courses.		✓	✓	✓	✓	✓	✓	✓	✓	✓
11. Boost Third Level Logistics course provision and improve practical experience in courses.		✓	✓			✓	✓	✓	✓	✓
12. Ensure a supply chain module is included in third level business and relevant non-logistics degree courses.		✓			✓	✓	✓	✓	✓	✓
13. Improve employers and students' knowledge of current FTDL course provision.		✓	✓	✓	✓	✓	✓	✓	✓	✓



Recommendations

1. Overarching Recommendation: Develop a Freight Transport, Distribution and Logistics Skills Engagement Group

A feature of the sector is that there is a relative lack of coordinated and joined up approach to the planning and delivery of relevant training and the provision of career path opportunities, especially for those at lower skill levels. With regard to further education and training (NFQ Levels 3/4 to 6), SOLAS has the profile and reputation to ensure that FET course provision addresses the skills and training gaps identified at these levels in this report. This requires the requisite logistics knowledge within SOLAS to act as a lead on this initiative. Given its strong links with the FTDL sector a centre such as DIT may be best placed to act as a voice for third level institutions which offer associated courses at NFQ levels 7, 8 and 9. This role will require the support of other institutions that provide FTDL courses provision. Industry bodies should take the lead working with SOLAS and Dublin Institute of Technology (DIT) on the development of relevant career pathways and National Occupational Standards and to enhance the image and profile of the sector as a whole.

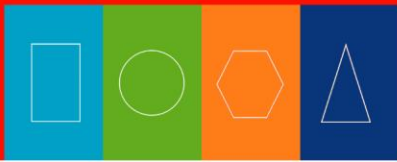
- A key strategic recommendation is the development of an industry led 'Logistics Skills Engagement Group' with a common purpose of enhancing Ireland's logistics and supply chain skills capability. Improved linkages between employers, education and training providers facilitated by this Group would help ensure that education and training provision is more optimally aligned with the skills needs of FTDL enterprises. The focus of this Group would be to ensure that:
 - The FTDL sector profile is high, making it easier to recruit the best talent - including by improving knowledge among secondary students of the range of interesting roles available;
 - Progression pathways become available to those entering or already working in the sector particularly for those at lower skilled levels, with clear role definitions mapped to academic or other vocational awards.
 - Development opportunities are available to provide the required skills, knowledge and competencies;
 - Employee retention is maintained;
 - The potential for setting up of a dedicated Skillnets network in the sector is examined.¹⁰

The Group could share knowledge and help identify new skill gaps and opportunities. It could consider best practice FTDL training / education initiatives introduced in other countries and consider whether they might be adapted / implemented in Ireland, i.e. Driver CPC initiatives, Good Distribution Practice schemes, use of simulators in learning (Crane, Fork-Lift truck, HGV other).

Time frame: Short-term to Medium-term.

Lead: Industry Bodies, Freight Transport Association, SOLAS, DIT (with other 3rd level institutions).

¹⁰ There will be a new call for Skillnets network proposals in Quarter 1 2015.



2. Overarching Recommendation: Develop National Occupation Standards for the FTDL sector to create career pathways in a variety of roles.

National Occupational Standards help individuals, organisations and training providers to improve performance. They are valuable for carrying out a variety of activities, for example:¹¹

- Providing a statement of competence which brings together the skills, knowledge and understanding necessary to do the work;
 - Providing a framework for training and development;
 - Improving recruitment by standardising the selection and interview process.
- It is recommended that employers in the FTDL sector identify National Occupational Standards for key areas in the sector. As a priority these should include Warehousing and Storage, Freight Forwarding International Trade and Logistics Operations; and HGV Drivers. Large organisations with developed progression pathways should be consulted. This will ensure best practice is included within any new progression framework and enable SMEs to take advantage of current systems in place.¹² Industry bodies should take the lead in working with SOLAS and DIT (and other third level institutions with relevant programmes) on the development of career progression pathways and National Occupational Standards.

Time frame: Short-term to Medium-term.

Lead: Industry Bodies, SOLAS, DIT (with other Third level Institutions).

3. Develop new Apprenticeship / Traineeship Programmes for FTDL sector

Structured entry Apprenticeship/Traineeship programmes need to be developed which provide progression pathways within the FTDL sector, such as those in Denmark and the UK. Employers need to be proactive and collaborate with SOLAS in relation to the new Apprenticeship call January 2015, to ensure that apprenticeships are developed to meet the sector's needs. (Employers need to put in a bid in by the end of March 2015, and then collaborate with SOLAS thereafter).

- As a priority it is recommended that an HGV Driver Apprenticeship programme is developed to address the anticipated shortfall in HGV drivers with the required licence (e.g. C, C1, C+E, C1+E). Employers should also submit a bid for a Warehousing and Storage Apprenticeship programme. Proposals for these apprenticeships should include, among other criteria set out within the Apprenticeship Implementation Plan, the extent to which proposers are representative of the sector, evidence of labour market need and the willingness to take on apprentices. UK examples of apprenticeship frameworks that could be considered here include:¹³
- Driving Goods Vehicles Intermediate / Advanced Apprenticeship; and
 - Warehousing and Storage Intermediate/Advanced Apprenticeship.

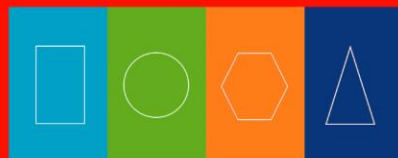
Time frame: Short-term to Medium-term.

Lead: Industry Bodies, SOLAS, HEA.

¹¹ Skills for Logistics Website, Sept 2014 <http://www.skillsforlogistics.org/products-services/national-occupational-standards/>.

¹² The Skills for Logistics Council in the UK is currently developing National Occupation Standards (NOS) for various roles in the logistics sector. It would be possible for these to be adapted and applied in Ireland.

¹³ Currently, new 'Trailblazer' apprenticeships are being developed in the UK to improve the apprenticeship programme there. New apprenticeships will be designed by employers specifically for roles in particular sectors. An apprenticeship being proposed is for a Supply Chain Specialist. Students will be able to choose one of three pathways to follow (driver, warehouse operative or operator).



4. Develop a schools/career service communication toolkit for the sector

There is currently a lack of knowledge among students of the range of roles available in the freight transport, distribution and logistics sector and the importance of the sector to Ireland's economy. Guidance Counsellors can play a strong role in promoting the sector to potential entrants, particularly women. Gender tailored messaging will help ensure that females are aware that there are no barriers to them taking up roles in the sector.

- A short supply chain element should be added to business or geography related aspects of the curriculum, and introduced at various stages of the education system. This could incorporate games such as 'Business on the Move' to ensure lessons are fun and engaging.
- An information pack should be prepared for Guidance Counsellors on the types of roles available in the sector and the opportunities it can provide. This could also be disseminated via the Careers Portal website and hard copy brochures where appropriate.
- A campaign similar to the Freight Transport Association 'Love Logistics' campaign in the UK should also be explored. This aims to make people aware of the FTDL industry and the impact it has on their lives. It includes a series of videos detailing what the logistics industry and is aimed at a variety of audiences.

Time frame: Short-term to Medium-term.

Lead: Industry Bodies, Institute of Guidance Counsellors.

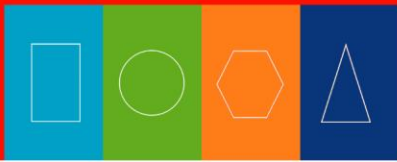
5. Build up FTDL SME Management Capability

There is a need to build-up FTDL SME management capability. Typical skills required are capabilities to competitively bid, complex supply chain systems, transport compliance, change management, risk management, lean processing, logistics security, sustainability, people management and negotiation skills. Employers have a key role to play in the identification and support for their managerial and technical upskilling needs. SME managers also need added skills to make greater use of IT and data analytics.

- The level of management capability within FTDL SMEs should be built up. This could be planned and delivered in collaboration with other SMEs. Upskilling needs can be met by building upon existing programme provision available to meet sector needs, such as ISME run management development programmes and other courses run by public and private bodies. New modules should be sector specific and capture key learning points such as supply chain management, finance for transport operators, optimising vehicle utilisation etc.

Time frame: Short-term to Medium-term.

Lead: Companies, ISME, Small Firms Association, Skillnets.



6. Build-up Global Supply Chain Management Skills

Ensuring the security and consistency of their supply chain, is an essential requirement for international customers. Policy in this area will be reinforced by the implementation of one action proposed in the EGFSN study on “Key Skills for Enterprises to Trade Internationally”. This is:

- Global supply chain management skills should be built up within companies, via CPD, for the export of goods and services and import of raw materials to ensure the standard of supply chain security and consistency sought by international customers.

Time frame: Short-term to Medium-term

Lead: Employer Bodies/Companies.

7. Improve training provision for Freight Forwarders and Customs Brokers

The level of customs expertise amongst freight forwarders needs to be improved. At present, there is little requirement to have undertaken customs training to be a freight forwarder and courses previously offered by the former FÁS are no longer available.

- A short SOLAS course should be introduced aimed at prospective entrants for freight forwarding roles and for those working in this area.¹⁴ Course content should focus on goods classification and valuation. In the long term, industry should move towards requiring the completion of an accredited customs course before entering the sector. This would create a similar arrangement to that in the USA and Canada.¹⁵ Consideration could be given to an advanced training course in this area, which would enable participants to deliver the entry-level course in-house. Opportunities could be explored to align the FIATA / IIFA Diploma in Freight Forwarding with the proposed customs course, thus helping to professionalise the industry further.

Time frame: Short-term to Long-term.

Lead: SOLAS, ETBs, Irish International Freight Association.

8. Introduce short IT user FTDL sector specific courses

IT user skills need to be developed for warehouse operatives up to management level. Whilst there are a number of IT courses available they are not specific to user needs in the sector.

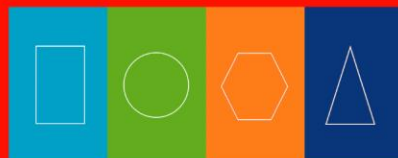
- Short accredited sector-specific IT courses should be developed to support the upskilling of employees in the sector particularly at lower skills levels. Courses should be aimed at the application of IT generally, rather than specific products on which users are likely to be trained in-house. Example course content could include the types of systems in place in warehouses, vehicle scheduling systems, Excel training and how IT supports the supply chain. Courses should be aligned to the development of the NOS and could be offered online.

Time frame: Short-term.

Lead: ETB's, DIT, Skillnets.

¹⁴ A useful point of consultation in relation to this would be the National Customs Consultative Committee.

¹⁵ National Customs Brokers & Forwarders Association of America and Canadian Society of Customs Brokers.



9. Develop 'soft skills' managers courses aimed at FTDL sector. More generally, integrate 'soft skill' development into training/education provision at all levels.

Research indicates that there is a lack of people management and communication skills affecting the ability of managers to liaise with their staff and engage with their customers. Those employed in the supply chain are in direct contact with overseas customers and there is a need to be aware of cultural sensitivities. This training is likely to be most applicable to those who have worked their way up from lower skilled positions who may never have received training in this area. Employers have the key role to play in the shaping and development of their management talent.

- Short sector specific soft skills courses should be developed aimed at management-level. This training could be based on existing course offerings, with content amended to reflect the international nature of working in the supply chain. Course content should include people management skills, developing strong relationships with customers, as well as cultural awareness considerations. Courses could be offered on a blended learning basis (class room and online learning). More generally, soft skills development should be integrated into education and training course provision at all levels particularly those at lower skill levels.

Time frame: Short-term to Medium-term.

Lead: ETB's, Companies, Skillnets, Business Associations.

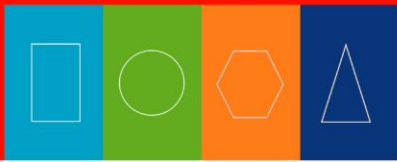
10. Encourage a lead centre to act as a single voice for 3rd level education institutions that deliver programmes relevant to the FTDL sector.

There is need for a lead centre with sufficient expertise to act as a voice for 3rd level education institutions that deliver programmes relevant to the FTDL sector and as a point of first contact for industry.

- Given its strong links with the FTDL sector, a centre such as DIT may be well placed to undertake this lead centre role. This will require the support and close collaboration with other institutions providing relevant programmes at NFQ levels 7, 8, 9. The centre will require a formal plan to champion progress and ensure the relevance and quality of third level programme offering. The lead centre should collaborate with SOLAS on the development of FTDL progression pathways from NFQ levels 5/6 to 7/8/9.

Time frame: Short-term to Medium-term.

Lead: DIT, Other Third-level Institutions with relevant course provision.



11. Boost Third level Logistics course provision and ensure practical experience in courses

The number of FTDL third level courses in Ireland is relatively small compared on a proportional basis to the UK and Germany. Programme content should include regulatory requirements, global supply chain opportunities, use of technology and leaner and greener logistics.

- Third level logistics course provision should be boosted in terms of numbers and course content. The integration of practical work experience with the theoretical elements of courses would ensure that graduates have spent time in a distribution warehouse or a transport depot learning how they operate. This will result in better prepared graduates and reduced training costs for FTDL enterprises. Delivering this element will require a close partnership between FTDL companies and education and training providers.

Time frame: Short-term to Medium-term.

Lead: Universities/IoTs, HEA.

12. Ensure a supply chain module is included in third level business and relevant non-logistics degree courses

Larger organisations in the sector currently recruit graduates both from logistics specific courses as well as other business courses which may not include modules relating to the supply chain.

- Supply chain modules should be included on business related courses from which the sector recruits. These could be developed from existing course material used on specific logistics courses. Content would include global supply chain management from Ireland, and the increasing importance of freight transport sustainability issues from both a cost and regulatory view point. This would have the effect of both informing graduates on non-logistics courses of a potential career in the FTDL sector and ensuring graduates arrive better prepared.

Time frame: Short-term to Medium-term.

Lead: Universities/IoTs.

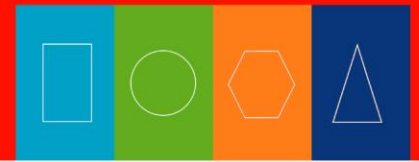
13. Improve Knowledge of the available range and quality of FTDL courses

Feedback from consultations is that there is a relative lack of knowledge among employers and individuals of the range of current FTDL programmes available.

- There should be a concerted effort to improve knowledge of available FTDL programmes. In this regard, the compilation of FTDL courses developed for this study could be utilised. There is currently a range of upskilling short courses aimed at the sector offered by institutions, although generally delivered in urban centres. Where possible (e.g more theoretical courses) these should be made more widely available across the country. In addition, an industry led quality kitemark for Irish logistics training provision and support for companies undertaking internal work based learning activities could be developed.

Time frame: Short-term to Medium-term.

Lead: Universities/IOTs, ETBs, Companies.



Chapter 1: Introduction

The open nature of the Irish economy¹⁶, with high levels of trade (exports and imports) and connection to an increasingly globalised world economy, combined with Ireland's geographical peripheral location means that achieving excellence in freight transport and logistics is vital for enterprise competitiveness and for attracting inward investment. Access to markets is one of the main factors for companies in deciding where to locate. The freight transport/logistics sector is an important enabler of economic growth. Around 80% of Irish manufactured output is exported, including much of the output of the 1,000 multi-national companies located here, as well as from indigenous industry. Freight transport comprises a significant component of total supply-chain cost. As transport-orientated companies become more logistics orientated they need to provide better service - and for that they need skilled staff.¹⁷

Logistics is in operation 24 hours a day, seven days a week and supports sectors across the economy - both in terms of facilitating trade and the domestic economy. Transport and Logistics is a process of planning, implementation and control of both the physical movement of products and information flow. The supply chain includes the movement, handling and storage of raw materials, semi-finished and finished products, from point of origin to the end consumer in the most efficient and effective way possible.

1.1 Study Objectives

The aim of the study is to assess the skills and competency requirements for freight transport, distribution and logistics activities in Ireland up to 2020, and to propose recommendations that will ensure the right skill base to meet enterprise needs. The approach adopts a holistic skills assessment of Ireland's logistics infrastructure for facilitating trade and the movement of goods within the domestic economy - by air, sea, road and rail. It will assess talent needs for all levels of educational attainment, including basic higher and further education.

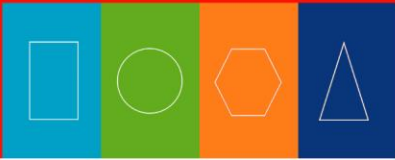
This report will highlight gaps in skills and competency requirements that can be addressed, including through domestic education supply and continuing professional development. This will help ensure that the skills and talent base of the sector in 2020 is fully aligned to the needs of enterprise. Also, the report ensures that development and career progression opportunities are identified for those at lower skill levels for job openings which may arise from expansion and replacement demand.

1.2 Methodology

The methodology comprises several integrated elements. All of these elements informed the recommendations resulting from this study.

¹⁶ Review of the Government Trade, Tourism and Investment Strategy, 2010-2015.

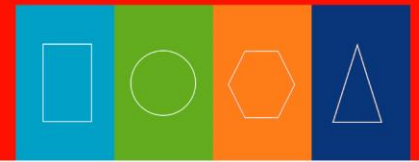
¹⁷ Trends, Developments and State-of-Play in the Transport and Logistic sector in the EU (2009).



The research and analysis work for the study was managed by the Secretariat to the Expert Group on Future Skills Needs and its progress was overseen by a Steering Group made up of industry representatives, education and relevant agencies, including SOLAS, Higher Education Authority, IDA Ireland and Enterprise Ireland.

Capturing the views of employers and key stakeholders is critical to understanding current FTDL sector trends and future developments. To this end, a broad-based consultation exercise was undertaken involving enterprises and key informant consultations, workshops and corroborative secondary research. This research work comprised:

- a) A Literature Review of relevant international and domestic literature. This is valuable for establishing the baseline employment of those engaged within the freight transport, distribution and logistics sub-sectors and their current/anticipated roles, qualifications, skillsets and competency requirements. It also looked at the changing role of freight transport distribution and logistics activities within new and emerging business models. The documents reviewed as part of this exercise have been used to corroborate findings throughout the report and inform the final recommendations where appropriate.
- b) Structured interviews with 40 FTDL enterprises representative of the various modes - road, air, rail and sea) in their role as employers of those in the sector; The aims of this element was to:
 - input into the estimation of the current baseline employment for skills, based upon a pre-defined profile of their roles;
 - identify the main trends and drivers impacting on the demand for skills up to 2020 on the numbers employed and their skillsets, competences and qualification requirements (with particular reference to the freight transport, distribution and logistics requirements of companies in the food, ICT and pharma / medical devices sectors);
 - find out how different roles interact to achieve greater synergy and enhance company performance;
 - identify the main trends and drivers impacting on the supply of skills training up to 2020 including the nature of employment on offer and availability of career pathways;
 - identify any current / anticipated skills and competency gaps;
 - consider how companies plan to address any such skills gaps including through further and higher education, upskilling/reskilling, continuing professional development; or inward migration; and
 - elicit proposals in relation to the building up of an adequate talent pool within freight transport, distribution and logistics activities in Ireland.
- c) In-depth interviews with 28 key informants/stakeholders, including FTDL representative organisations, education and training bodies and relevant state agencies;
- d) Three sector focused workshops (two in Dublin and one in Cork) with participation from 40 stakeholders including road haulage operators, those involved in air freight, sea freight, education and training providers, manufacturing and FTDL associations. Efforts were made to ensure that representatives from all sectors and modes were present to get an accurate understanding of the issues facing the sector. The workshops covered elements such as current logistics skills requirements (e.g. training, operational knowledge) and future skills need (perceived challenges and opportunities).



- e) A skills demand forecasting exercise to determine future FTDL workforce demand and the extent of potential job vacancy opportunities arising in the FTDL sector in the years to 2020.
- f) The process also benefitted from the valuable input into the research and drafting of the recommendations from the members of the Steering Group at several meetings.

Enterprises surveyed were engaged in the movement of a wide range of freight goods. While some companies specialised in the transportation of a particular product such as oil, others were engaged in the transportation of a wide range of products.

The typology of companies which were included in the research was:

- Third Party Logistics Providers (3PL's) - many companies who move goods internationally outsource some or all of the management of their logistics services to such providers;
- Internationally orientated road freight transport companies;
- Large Irish food companies who undertake their own international logistics in order to ensure the security and consistency of their supply chain;
- Large domestic Retail Multiple Groups who undertake their own logistics and warehousing activities;
- Operators engaged in intermodality and co-modality logistics activities - such hub cargo handling activities facilitate the timely and efficient outward and inward freight movement;
- Consultancy firms which provide logistics services as a major part of their business activity;
- Public Bodies who provide a service related to ensuring efficient international trade logistics.

Demand Scenario Exercise

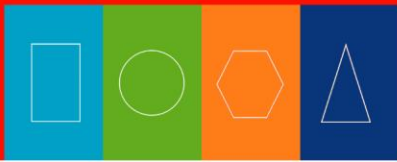
This element, presents two possible alternative demand scenario forecasts (the difference between them illustrating the level of any uncertainty in relation to the realisation of their underlying assumptions, drivers and supporting conditions) for core FTDL occupations broken down by expansion and replacement demand over the period 2014 - 2020. It provides an estimate of the number of potential job vacancies likely to arise over the period to 2020.

An Assessment of the current and planned supply of skills at NFQ Levels

This element provides an assessment of the current and planned supply of skills at NFQ levels categorised by those participating on public and private higher education programmes, further education and training programmes and continuing professional development programmes. This work was undertaken by the EGFSN Secretariat.

A Review of FTDL training and education initiatives undertaken in selected countries

A review of FTDL training and education issues were examined in a selected number of countries. These were the Netherlands, Germany, Singapore, Denmark and the UK. This work was undertaken by the EGFSN Secretariat.



Chapter 2: Drivers of Change

There are several global and domestic drivers of change impacting on the skills and talent demand of the FTDL sector as follows:

2.1 International Drivers of Change

Technological Change

Technology has long driven skills requirements in the FTDL sector. There is an increasing demand from customers for up-to-the minute information on where their consignments are. This affects all modes, and it encourages companies to offer track and trace facilities. For example, in retail distribution there is a target of achieving 98% “on shelf availability” of products in stores (otherwise customers may choose a different brand, or shop elsewhere). Third party logistic providers are evolving into technology providers with their own software, and it was considered that Freight Forwarders need to follow that model.

The growing use of technology and ‘smart solutions’ throughout freight and logistics activities means that the skills needs of these employees will be more ICT-based than currently.¹⁸ It is thought that firms will attempt to accommodate these requirements in two different ways. Some firms will appreciate the benefits offered to significantly reduce costs through integrated supply chain management, bringing together transport, distribution, production and marketing to provide a more flexible cross-functional team.¹⁹ The second approach, which is the opposite, is to outsource logistics completely to specialist teams outside of the company itself.

Sustainability Agenda

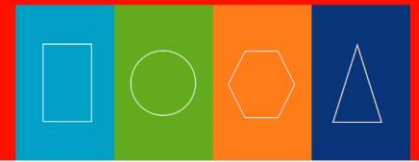
The movement towards low-carbon and energy efficient transport resulting in the lowering of freight movement related CO₂ emissions, and an improved understanding of the real impact that climate change is having will put pressure on the sector to be more sustainable. This may include increasing use of electric vehicles, use of compressed natural gas for freight, enhanced requirements for carbon reporting, more stringent EU regulations and pressure for reduced use of air freight. This will increase the demand for skills areas such as carbon reporting and the ‘greening’ of operations.

Regulatory and Legal Issues

There are increasing EU requirements governing the movement of products. For example EU directives requirements for the distribution of medicinal products provide the authority to companies, assuming they can meet the regulatory requirements, to manufacture and/or distribute health products in a country. The EU market for transporting freight by road has been opened and the EU has introduced a set of uniform rules to ensure fair completion among road freight users. These include regulations on HGV vehicle safety, level of HGV driver’s professional competence, the

¹⁸ Employment in the EU Transport Sector, p.3.

¹⁹ Fourth Report of the Expert Group on Future Skills Needs, p.73.



maximum length of time HGV drivers can drive, tighter controls on the movement of dangerous goods, and cabotage rules which allow a haulier from one country to transport goods within another country on a temporary basis when making international deliveries.

Move towards International Centre of Excellence for the Supply Chain

Increasingly, organisations are looking to consolidate management of their supply chain in a single location in response to increasingly complex arrangements and demand for ever greater efficiencies. Centralised supply chain management can occur in countries that have expertise in distribution and logistics and usually occur in mature freight markets. It can facilitate the movement of goods that do not travel through (or anywhere near) the country the supply chain is being managed from. Growth in this area will require an increase in higher end skills in the FTDL sector and supporting skills such as software development, contract law, finance and process engineering. Ireland's expertise in multi-modal freight and distribution is seen as a clear strength in this regard.

2.2 Domestic Drivers of Change

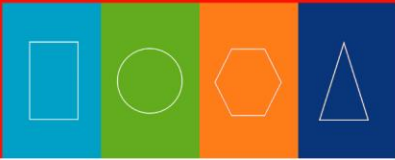
Open Nature of the Irish Economy

The open nature of the Irish economy²⁰, with high levels of trade (exports and imports), combined with Ireland's geographical peripheral location means that achieving excellence in freight transport and logistics is vital for enterprise competitiveness and for attracting inward investment. Access to markets is a main factor for companies in deciding where to locate. The freight transport/logistics sector is an important enabler of economic growth. Around 80% of Irish manufactured output is exported, including much of the output of the 1,000 multi-national companies (MNCs) located here, as well as that from indigenous industry. Freight transport comprises a significant component of total supply-chain cost.

Ireland's Strategy for Trade, Tourism and Investment

The Government's Strategy and Action Plan for Irish Trade, Tourism and Investment to 2015 are to increase the value and diversity of indigenous exports including increasing goods and service exports to existing markets such as in the USA, UK, Germany, and France while at the same time increasing exports to the BRICS countries and the Middle East Region. A review of this Strategy in 2014 also highlighted the need to engage with high growth markets in Asia, South America and Africa. The implementation of the strategy will impact on FTDL skills requirements. For example, customs procedures are complex and constantly evolving, even for established markets. However, for emerging markets requirements can be more intricate, which makes skills in this sector vital to the efficient movement of goods to and from these countries. The fluid nature of customs requirements means that there is a constant need for refresher training and recent experience.

²⁰ Mid -Term Review of the Government Trade, Tourism and Investment Strategy, 2014.



Cost Competitiveness

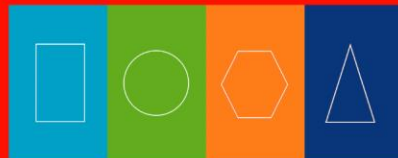
The supply chain is not a 'value added' element of production and as such it is often the subject of attempts by consigners to reduce costs. Since the economic downturn in 2008 there have been efforts by those in the supply chain to reduce costs, in order to compete on price. Similarly there has been pressure from producers to maintain profitability by reducing costs. As such 'lean skills (e.g. solutions to waste) have become important. This has led to the emergence of a 'leaner' sub-sector, which may focus on price. As a result the role of finance and the associated skills requirements have become increasingly important in the sub-sector, with margin erosion now a key factor in the industry over the last 5 years. Improved communication between suppliers, supply chain organisations and customers in addition with improved collaboration helps to reduce inventory throughout the supply chain, ensure there is less of an impact on the environment, as well as cutting costs across the board

Consolidation of Key Players in the Industry

Mergers and acquisitions in the sector and the emergence of MNCs have led to a consolidation of key players in the industry. Although SMEs still perform a vital function in the sector, consolidation and resultant economies of scale offer an opportunity to create improved career pathways and a greater focus on structured training and education.

Relatively poor career image of the Sector

The sector suffers from a low profile generally, with little knowledge of how it operates and opportunities for careers associated with it. This makes it more difficult to both attract and retain talent. This can be attributed in part to a lack of marketing of careers in the industry and the service it offers, aside from large companies which have their own strong brand recognition. Knowledge of careers in the sector is often restricted to awareness of traditional roles such as HGV drivers, which are not attractive to many in the workforce as it is seen as long hours, stressful driving conditions and poor pay. This is despite the fact that the sector offers many varied and relatively well paid professional career opportunities.



Chapter 3: Profile of the Sector

This section provides a profile of the freight, logistics and distribution sector in Ireland. It has been developed from feedback received from the key informant interviews and workshops and corroborated by additional research where required. It covers typical roles in the sector, the importance of the sector to key export sectors, non-road freight modes (of particular importance in Ireland) and the skills requirements for entry into the industry.

3.1 Multi-modal

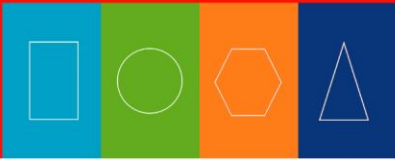
Given that Ireland is an island, it is required to have expertise in facilitating a multi-modal supply chain incorporating sea, road, rail and air freight. As such there is expertise in the workforce of all modes of freight transport.

Road Freight

Road Freight is the most common means of transporting goods in Ireland and as such is the largest employer and an essential element of the supply chain. Road freight in virtually all instances performs some role in the supply chain, even if it is simply to transport goods the 'last mile' from a port or airport to the customer. The Irish road freight sector is served by a combination of well-known MNCs, large domestic providers that also operate internationally and many smaller operators, some of which are focused on transporting for certain sectors. Organisations that may be primarily focused on other areas (such as domestic retail multiples) may have their own in-house road freight operation. As a result lorry drivers are the most common role observed in the sector. This is unlikely to change, unless a dramatic shift in the sector occurred.

The peripheral location of Ireland means it is less subject to competition from cheaper Eastern European hauliers than countries such as Germany and the Netherlands. This is theoretically limited within Ireland by EU cabotage rules, which restricts foreign hauliers to three cabotage operations within a seven day period starting the day after unloading of international transport. EU legislation has a significant impact on the road freight sector, affecting areas such as the length of time a driver can operate a vehicle for, the professionalism of the industry via the requirement for an operating licence and the types of vehicle coming into the industry. Irish hauliers operate throughout Europe, often using the UK as a landbridge. The sector is supported by a number of non-driving roles including mechanics and transport planners and managers.

Road freight is highly competitive with many road haulage operators competing for loads, which results in competitive prices. Up to 80% of freight vehicles in Ireland do not require an Road Haulage Operator's Licence (where a haulier only does own account work i.e carriage of their own goods in their own vehicles driven by themselves or their employees, or in the delivery of goods to a customer who has bought the goods from them, then they do not need a Road Haulage Operators Licence). Road Haulage is also resource intensive, both in terms of fuel and labour. With increasing fuel prices, insurance prices and extreme competition in the road transport sector, employers have a vital interest to keep expenses to an absolute minimum. Therefore increased training is being carried out for low-fuel driving, efficient handling of goods as well as for health and safety issues.



Air Freight

Air Freight in Ireland accounts for only 1% of freight tonnage by volume but about 35% of the value of all freight into and out of Ireland - mainly seasonal foodstuffs, pharmaceutical, medical devices and IT components. The industries that use air freight sit at the higher end of the value added spectrum.

Most of Ireland's international freight is carried in the hold of passenger aircraft. However, not all carriers provide a freight service, which means that there is less choice in terms of frequency and range of locations served for freight services, than is the case for passenger services. Dedicated air freighters are an important and growing part of the international air freight business.

There is considerable scope to enhance Ireland's export competitiveness through better air freight provision, shortening supply chains and reducing time to market. Access to a choice of competitively priced and frequent air freight services to a range of short haul and long haul destinations in existing and emerging markets is critically important.²¹ However, limitations on the number of destinations that can be reached from Ireland by air have a negative effect on the amount of airfreight being flown directly to and from the country. There has been a loss of potential air freight business to the UK (and in particular Heathrow) with consignments often being transported by HGV to airports in the UK for onward movement. This is facilitated by the number and frequency of ferry crossings linking Britain and Ireland.

The sector has significant flexibility as a result of the majority of air freight being carried on passenger aircraft in the belly hold - thus whilst dependent on passenger demand there is scope to increase or decrease shipments relatively easily.²² Long-term global forecasts for the international air freight point to a continued strong growth over the coming decades.²³

The skills that are required by the industry are similar to those in other areas of logistics and freight forwarding, mainly an awareness and ability to use new technology and related technical and analytical skills. Similarly, as an international business, intercultural competences will be of increasing importance as globalisation continues.²⁴ Currently only 4% of Irish air freight goes to the BRIC (Brazil, Russia, India & China) countries compared to an average of 20% across Europe and there is significant scope for expansion as flights to and from the Middle East continue to increase.²⁵

Given the potential risks associated with transporting goods via air freight, knowledge of security and the aviation environment is a key skills requirement for those working in locations such as aviation warehouses. Pay in the airfreight sub sector is higher than other areas of the sector and barriers to entry are high, with experience in the sector much sought after. Those in roles related to air traffic control, pilots and load planners routinely earn over €50,000 per annum.

Feedback from those in the air freight sector suggested that there was a lack of competent staff in areas of security, technology (e.g. x-ray systems) and the ability to interpret data and systems. Staff require knowledge of the often greater technical regulatory requirements of undertaking work for MNCs as opposed to the reduced requirements for SMEs.

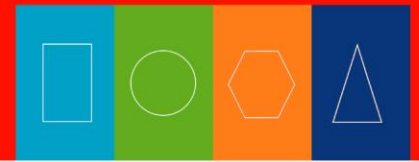
²¹ Draft National Aviation Policy for Ireland, May 2014.

²² All Island Airfreight Report p27.

²³ Draft National Aviation Policy for Ireland (2014) p 14.

²⁴ Investing in the Future of Jobs and Skills - Transport and Logistics, p112.

²⁵ All Island Airfreight Report p20.



The air freight industry is prone to shocks (e.g. terrorism) and as such staff are required to be flexible and agile in response to outside events. Inexperienced graduates are not commonly recruited into the air freight industry and those in management positions have often progressed from entry level positions. It was felt that structured apprenticeships were missing at entry level, with countries such as Denmark providing freight forwarding apprenticeships.

Training in the sector is often provided in house, although courses are provided by the IATA and IIFA but organisations awareness of this offer is not widespread. Refresher in-house training is often based online, which is cheaper than face-to-face training. Training for those in lower skilled positions is mainly specific to the equipment that is being used.

Sea Freight

Ireland is heavily dependent on ports for trade. While trade of non-transportable services has grown, most of Ireland's merchandise imports and exports of goods are still transported by sea. The Competition Authority estimates that in 2011 sea-borne freight accounted for 84% of Ireland's trade in volume and 62% in value terms.²⁶

Dublin is Ireland's most important port for both exports and imports. In 2011, 43% of all merchandise moved by sea was handled by Dublin, 22% by Shannon Foynes and 19% by Cork. One of the key growth sectors is the food sector which is likely to lead to an increase in sea freight volumes over the period to 2020.²⁷ Ten of the 11 ports in Ireland have reported increases in tonnes shipped in 2013 compared to 2012 as growth began to return to the economy.²⁸

The international trend towards larger shipping vessels will reduce 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, including Dublin and Shannon Foynes have the potential to provide deeper water services.²⁹ In order to facilitate this trend further, and maintain international standards, larger vessels and deeper water services will be required, with resultant increases in demands for pilots, crew and captains, as well as increased capacity at ports themselves. Shipping by its very nature is international and therefore those forming part of the international supply chain to and from Ireland are drawn from across the world.

There are various roles associated with port operations to ensure that goods are safely and efficiently loaded and unloaded onto ships and stored whilst awaiting onward transportation. The type of goods a port handles reflects the skills requirements of the associated employees, for example ports that handle containers or bulk goods. These include:

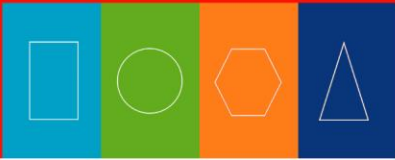
- Stevedores
- Engineers
- Crane operatives
- Plant operatives
- Port operations managers and administration

²⁶ Irish Exporters Association (2012), Trade and Transport Analysis.

²⁷ Joint Agency Inputs on Enterprise Transport Trends and Needs, p.10.

²⁸ Trade and Transport Analysis (2014), p.13.

²⁹ Joint Agency Inputs on Enterprise Transport Trends and Needs, p.11.



- Warehouse operatives
- Technical support and maintenance
- Lock operations

Discussions with managers at port operators suggested that, whilst it was not difficult to find individuals who were willing to work at a port, finding competent people was. Many entry level staff are recruited through referrals via existing employees and are often taken on through an apprenticeship type programme, which does not have an upper age restriction.

Health and Safety training is vital for those working in a port given the hazardous nature of the environment. Larger port operators (e.g. Peel Port in Liverpool) often have their own training centre, with trainers visiting Irish ports to deliver courses.

There are moves to encourage greater flexibility amongst port employees and as such ports are training staff to be able to work across a number of roles.

Rail Freight

Rail freight is not a significant means of transporting goods in Ireland, with approximately 1% of all goods moved by rail. Factors such as the small size of the country, the type of products produced access to rail networks and the comparative advantage of road transportation all affect the attractiveness of rail freight in Ireland.

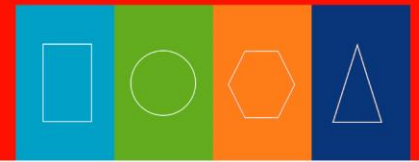
Although rail freight in Ireland has been in decline (Iarnród Éireann transported 567,000 tonnes of freight in 2012, a fall of 7.2% when compared to 2011 whilst freight traffic tonne kilometres fell by 13.5% to 90.8m over the same period) there are plans are to encourage greater use of this more sustainable mode.³⁰ The skills needed to facilitate this will be, like elsewhere, mostly related to ICT as most planning and management activities will be computer-based. The increasing use of the network and the need for efficiencies to improve intensity of use will also call for greater analytical capabilities from managers and planners.³¹

Rail freight in Ireland is almost exclusively operated by Iarnród Éireann. There are three elements of the freight business: the core rail freight element; Navigator (the transportation of automotive parts for dealerships in Ireland by road) and Fast Track, which transports small parcels by rail and offers a same day service. Fast Track is being wound down due to changes in rail carriages and improved road network and haulier coverage.

Iarnród Éireann had been withdrawing from the rail freight business due in part to the competition provided by road freight utilising the enhanced road network. This has been affected by limitations on the days and routes services can operate, due in part to the disconnection of a number of terminals from the rail network. Regardless, Iarnród Éireann has an aspiration to grow the rail freight business to represent 4-5% of the total freight market. However in the last 18 months there have been efforts to reinvigorate the business, both in bulk and container movements

³⁰ Transport Omnibus 2012, p.68.

³¹ Investing in the Future of Jobs and Skills - Transport and Logistics, p.108.



Goods transported include raw materials such as ore and zinc, forestry products and consignments associated with the food and drink sector (although the ability to transport fresh and frozen food was stated as desirable).

The rail freight aspect of Iarnród Éireann effectively buys in services from the passenger arm of the business, including drivers, guard and signallers. All drivers are trained on a specific route and have regular practical experience of driving a freight train.

Generally, individuals come into the company and work up to driving trains (drivers not being directly hired) being trained internally. These entry level positions include depot operations, station and platform duties, booking offices and shunting exercises.

There are only approximately 12 staff in the core rail freight team and includes roles relating to customer relations, administration and consignment tracking. Staff generally have Leaving or Junior Certificate qualifications. Iarnród Éireann often take on placement students from rail, transport and logistics courses, however there has been a ban of recruitment since 2008, which has seen staff numbers reduce. Iarnród Éireann has its own training centre that delivers 40,000 training days per year, generally focused on training focused on particular roles. The company also works with institutions and external training providers when appropriate (such as marketing and customer services courses). This applies to staff associated with both passenger and freight services.

As Iarnród Éireann seeks to grow its business, it may look to train or recruit those that are able to develop it commercially, selling rail freight as a viable and attractive alternative. In many other European countries there is competition between rail freight companies and this has prompted the recruitment of young and experienced logistics professionals, sometimes from the road freight sector bringing modern logistics knowledge to a traditional sector.

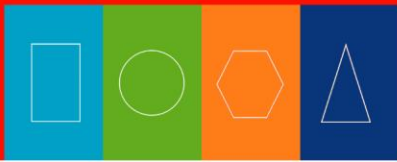
Warehousing

The supply chain often requires the storage of goods and materials where they cannot be transported in a single trip from factory to customer. Warehouses perform that role and are significant employers of those in the sector. Roles include Fork lift operators, order pickers, warehouse operatives and managers. Increasingly 'added value' operations take place in warehouses, such as branding, pricing and merchandising of stock in readiness for final delivery to a shop or customer. Warehousing is, along with HGV drivers, one of the key employers of staff in the sector. A warehouse supervisor needs detailed knowledge of operating tasks along with significant management skills. Warehouse supervisors' jobs now span organisational levels and are critical to the performance of the logistics and warehouse operation.³² Despite this, warehouse training tends to be unstructured and informal.

Average Earnings in the Sector

The CSO labour cost analysis for September 2014 shows that average annual earnings in the transportation and storage sectors are significantly higher than in other industries and earnings have grown steadily between 2009 and 2014. This suggests that the perception that jobs in the industry

³² Managing the critical role of the Warehouse Supervisor, p.1.



will not be highly paid are not credible.³³ As set out in Table 3.1, the Transportation and Storage sector ranked 7th amongst sectors in terms of total labour costs. Average total labour costs in Transport and Logistics are slightly above the overall average, too.

This suggests that, contrary to reports from other countries, the relative attractiveness of careers in the sector in Ireland is not being negatively affected by low wages. It is more likely influenced by the conditions of work and perhaps the image of the sector. However, it is worth noting that the ‘transport and logistics’ sector does not align precisely with the core subsectors in this study as it will include passenger transport. The trend since 2009 has shown greater increases in transportation and storage than those registered for the overall average. However this is more of a ‘comeback’ effect as wages and salaries in transportation and storage declined considerably in 2008 - 2009 (-3.7%) while there was a minor increase (+0.2%) overall. On the whole, the influence of salaries on the attractiveness in the sector is deemed to be neutral. Indeed, given the nature of the industry and the typical qualifications required in many positions, transportation and storage would now appear to be relatively attractive when compared to other sectors.

Table 3.1: Average Annual Earnings and Other Labour Costs for All Employees by Sector (2013)

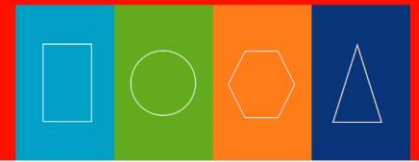
Sector	Total Labour Costs* (Euro)	Rank
Information and communication	67,208	1
Financial, insurance and real estate activities	64,743	2
Public administration and defence; compulsory social security	52,094	3
Industry	52,019	4
Education	46,816	6
Professional, scientific and technical activities	49,347	5
Transportation and storage	45,574	7
Construction	40,756	8
Human health and social work activities	39,410	9
Wholesale and retail trade; repair of motor vehicles and motorcycles	31,343	10
Administrative and support service activities	29,185	11
Arts, entertainment, recreation and other service activities	29,013	12
Accommodation and food service activities	17,605	13
All	41,433	

* Total labour costs include salaries and other labour costs including Statutory employers' PRSI, other social costs, Benefits in kind, etc.

3.2 Ireland as an exporting nation and its importance to key sectors

Unlike many established consumer economies, Ireland’s is an export economy, with high value items such as pharmaceuticals, food and drink, ICT and medical equipment exported across the world. The integrity of produce from these sectors is vital, often with severe financial implications if a consignment is compromised. As a result exports (if not imports) did not significantly reduce during the economic downturn and have been key to the return to growth. Ireland’s logistics sector is seen

³³ CSO Labour Cost Analysis September 2014- Table 1.



to be very effective at facilitating both exports and imports, with online shopping reported in the workshops to be driving the growth of imports in particular. This has driven a demand for skills in relation to customs in the sector. In order to facilitate exports and imports an expertise is required in customs, which is constantly evolving and requires continuous training. It has been reported that manufacturers lack customs knowledge and it falls to those working in the supply chain to provide that expertise, due to widespread outsourcing of logistics requirements. Ireland's location as an island means that the supply chain has to work effectively for goods and produce to reach international markets. It can also have a limiting effect on the requirement for skills and training in the sector as companies may choose to use hub operations elsewhere, closer to markets.

The following section describes the importance of the sector and associated supply chain to Ireland's key export sectors and how it has enabled those sectors to sell their goods internationally and compete on the world stage.

Food and Drink Sector

The food industry is essential to Ireland's economy, with much of the produce being exported with Food and Drink comprising 10% of Ireland's merchandise exports. Harvest 2020 is a strategy aimed at exporting €12bn of foodstuffs by 2016 (currently at €10bn). The supply chain is key to facilitating these exports to achieve this target. Mainland Europe is a key market for Ireland and produce is often shipped by road directly from Irish ports, or by using the UK as a landbridge. In order to facilitate this trade Bord Bia is currently investigating the feasibility of an additional route sailing between Ireland and France to offer a daily service for seafood products as it is essential that products associated with the food industry are delivered to the right location at the right time.

Food manufacturers may have their own in-house (known own account) supply chain operations or they may use Third Party Logistics Providers (3PLs) to transport their goods to ports, airports and the domestic market. For example Monaghan Mushrooms, a major mushroom producer, directly employ drivers and warehouse operatives as well as logistics and distribution professionals. Smaller food producers are more likely to require support from third parties. Food manufacturers in remote locations are more limited in their choice of supply chain partners and often procure hauliers that are known to them, which may not be the most economical or effective option. However, Bord Bia provides guidance to the food and drink sector on potential logistics service providers.

The type of foodstuffs being produced and the market it is destined for dictates the mode and method in which it is transported and stored. For example, high value foodstuffs, such as organic fruit, being sold to non EU foreign markets that perish quickly are more likely to be subject to transport by air, whereas less time sensitive, heavy goods (such as potatoes) are more likely to travel by road and sea with less requirement for refrigerated/frozen trailers, containers etc.

Ireland is well known for its drinks industry with strong export sales of beer and whisky. Some items, for example Guinness, are exported by refrigerated tanker to countries such as the UK for bottling and sale in those markets. Two aspects of refrigeration skills needs identified are technicians for refrigerated vehicles and warehouse operations. The types of skills related to the sector required to facilitate this movement of goods are presented in Table 3.2.

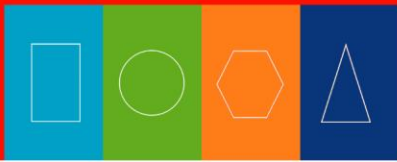


Table 3.2: Sector skills demand associated with the transport of food

Foodstuff	Example Market	Likely method of transport	Associated skills demand
Root vegetables (mature)	Domestic	Road only, unrefrigerated	HGV drivers, warehouse operatives for storage
Milk/Dairy	UK	Road and sea, refrigerated tankers and box sided trailers	HGV drivers, warehouse operatives for storage, refrigeration technicians, customs
Organic Fruit	International	Air freight, refrigerated	HGV drivers, pilots, aviation warehouse operatives for storage, refrigeration technicians, customs
McCann's Oatmeal	US	Road and Sea, Containers or box sided trailers	HGV drivers, warehouse operatives for storage, port operatives, customs, maritime engineers and officers

Source: AECOM

The demand for 'out-of-season' foodstuffs all year round is driving the demand for airfreight in relation to the food sector, mainly in terms of imports. Air freight enables importers across all sectors to respond to unexpected shortfalls in supply or surges in demand to maintain continuity of supply and as such is of great importance to certain types of producer in Ireland.

Technology Sector

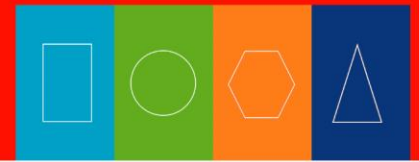
Many of the largest technology providers in the world have a presence in Ireland and often have European Headquarters or key functions of the business located in the country. Ireland has been a significant technology exporter for many years and by the late 1990's Ireland had become one of the major European locations for the computer hardware industry. The country accounted for some 5 percent of global computer exports and 6 percent of global electronic components exports. A significant proportion of computers sold in Europe were assembled in Ireland, however production has largely relocated eastwards to China and Central and Eastern Europe.

Ireland remains highly attractive to tech firms due (in part) to its membership of the EU, that it is English speaking, favourable tax arrangements and has a skilled workforce.

Hardware to software and services and the impact on the supply chain

As discussed, there has been a shift from hardware production (outsourced to developing companies) to software and services (Microsoft exports software, coding and programming, desktop publishing, design and applications) with hardware production now occurring in developing countries such as China. However, the Irish software industry is very exported-oriented with over 97% of domestic production sold abroad.³⁴

³⁴ Doing Business in Ireland: 2011 Country Commercial Guide of US Companies.
http://www.export.gov/ireland/build/groups/public/@eg_ie/documents/webcontent/eg_ie_032480.pdf.



As a result, exports are now often not a physical product (downloaded content) and as such requirement for import of raw materials/components and use of the traditional supply chain is reduced from traditional PC/Laptop manufacturing. Software can also be transferred to disc in the country of sale rather than production.

However, some of the software and systems produced by technology firms in Ireland is directly aimed at logistics and freight operators, helping improve their efficiency and effectiveness in relation to consolidation, document management, automatic pricing, stock tracking etc.

Technology exports and the use of air freight

Many technology providers outsource their freight and distribution requirements to 3PLs and as such often are not significant direct employers of traditional jobs in the sector. However, they do employ supply chain management professionals to manage the process and work with suppliers, often on behalf of the wider supply chain associated with the company outside of Ireland.

For example Microsoft's EMEA Operations Centre (EOC), based in Dublin provides a broad range of business services, including supply chain management and when Dell reduced production of hardware in Ireland it continued to co-ordinate logistics and supply-chain activities from its Global Innovation Solutions Center and European Command Center in Limerick.³⁵

Where a physical product is produced for export, technology firms may use air freight as a means of exporting products to customers around the world. Air freight is attractive as it allows the product to get to customers quickly (ahead of the competition if possible) and the light, high value nature of modern hardware and software means it is not prohibitively expensive per unit dispatched to transport goods this way.

Pharmaceutical Sector

Ireland has a globally significant life sciences sector and nine of the top ten global companies are located in Ireland.³⁶ The pharmaceutical industry in Ireland is highly advanced, incorporating the latest technology, state of the art equipment and strict quality control procedures. Ireland's pharmaceutical industry offers a wide range of products and services, from research and development to the manufacturing and marketing of new medicines for humans and animals. In 2012 Ireland was the world's largest net exporter of pharmaceuticals, accounting for 50% of export in value terms.³⁷

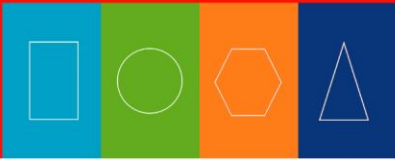
The integrity of transport and storage of pharmaceuticals is of the utmost importance, with security of goods, the temperature they are kept at and the potential hazard they pose all resulting in enhanced training requirements.

Pharmaceutical companies often outsource the transport, storage and distribution of finished goods and raw materials to specialist third parties that have the requisite skills, equipment and accreditation to transport associated products.

³⁵ <http://www.cnet.com/uk/news/dells-ireland-plant-to-shed-1900-jobs/>.

³⁶ IDA Ireland Website, <http://www.idaireland.com/business-in-ireland/life-sciences-pharmaceuti/>, Accessed 29th August 2014.

³⁷ Department of Jobs Enterprise and Innovation Website, <http://www.djei.ie/press/2012/20120223b.htm>, accessed 29th August 2014.

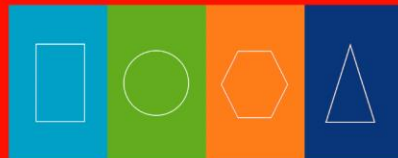


The Health Products Regulatory Authority (HPRA) is the Regulatory Authority that monitors the safety and quality of medicines available in Ireland. They regulate medicines, medical devices and other health products, including animal health, cosmetics etc.

HPRA is responsible for regulating distribution companies, to ensure that they comply with relevant standards and legislation. For example the requirements for the distribution of medicinal products require companies to comply with various EU Directives (e.g. S.I. No. 164/2013 - Medicinal Products (Control of Wholesale Distribution) (Amendment) Regulations 2013). They provide the authority to companies, assuming they can meet the regulatory requirements, to manufacture and/or distribute health products in Ireland. Many of these requirements for those involved in distribution are captured by organisations working to a standard of Good Distribution Practices (GDP).

Some key skills issues were noted as areas where improvements could be made by distribution companies regulated by HPRA and where compliance could be improved through up-skilling or re-skilling:

- **Cold Chain Distribution** - Recording, monitoring and compliance is an issue as temperature conditions for many medicinal products need to be maintained, especially for air freight. More awareness of risks in the supply chain in relation to cold chains is required.
- **Supply Chain Risk** - Improved understanding is required of risk assessment techniques applied to the supply chain and possibly linked to a national qualification. Companies need to fully understand the impact when distributing medicinal products across the supply chain.
- **Quality Risk Management techniques** - now a legal requirement for GDP and transport is a major part of the process. It was stated that companies need to mitigate risk in relation to security, patient safety and ensuring product availability.
- **Audit Skills** - there are no uniform standards for auditing, which is a requirement under GDP.
- **Responsible Person (RP's)** - The requirement to have an RP is a legal requirement and it is expected that they are 'competent' to do the job - e.g. Pharmacist plus evidence of CPD. HPRA offers regular CPD through their own seminar programme but expect the RP's to use their initiative and do more. There is no Pharmaceutical Wholesale trade association in Ireland similar to those in other countries (e.g. British Association of Pharmaceutical Wholesalers (BAPW) in the UK) who could support the RP role in maintaining CPD requirements. RP's are also required in cosmetics but many smaller cosmetic companies are unaware of their obligations e.g. small handmade soap makers, retailers.
- **Technology** - There is increased use of track and trace technology and the need for companies to fully understand the requirements. Systems used in the manufacture and distribution of pharmaceutical products require a more rigorous process of acceptance before use (e.g. computer systems validation) this requires expert skills and can often cause delays in using the system. This concept of validation also applies to vehicles - "a Warehouse on wheels" where control is critical to maintaining compliance.
- **Specialist knowledge** - problems are often encountered by HPRA where special storage or distribution requirements are required and companies lacked sufficient knowledge (e.g. controlled drugs and especially the security of these products). Other issues like customs and excise procedures linked to relatively new legislation (e.g. Falsified Medicines Directive) could be causing unnecessary delays in the supply chain and added costs.



Case Study: Good Distribution Practices

The **Good Distribution Practice (GDP) Passport** by the Irish Exporters Association is the first of its kind and through skills development ensures compliance and safety throughout the whole supply chain. No other country in Europe has a similar scheme (although the UK is currently developing National Occupational Standards which are likely to be developed into a similar passport scheme and/or national qualifications for GDP). Although HPRA encourage the scheme they don't endorse it as such as it is delivered via training providers and they must remain impartial. They see the passport as just one part of the overall strategy to improve skills, although it has become the Irish 'qualification of choice' for the sector.

3.3 Multinational Companies (MNCs) and Small and Medium Enterprises (SMEs)

In the past, the freight, logistics and distribution sector has been typified by SMEs providing services locally and nationally. Now, large MNCs are key players in the sector. Larger organisations are more likely to employ individuals associated with support services and have their own in-house training or 'knowledge centres' than SMEs. As such progression and training is likely to be of a higher standard than that in smaller organisations. For example the development of 'progression stairways' linked to skills and training frameworks may be provided at those organisations that employ significant numbers of freight, distribution and logistics staff. By providing a clear pathway to progression those organisations can demonstrate to entry level employees that there is potential for a career in the sector. So for example some companies employ 'driver trainers' who are often senior, well respected experienced drivers who are charged with training new staff.

However, there is evidence to suggest that the economic downturn lead to MNCs relocating central functions to 'home' markets, with associated training centres closed. Despite this, those previously employed by MNCs may then remain in the country, resulting in a net skill gain and experience of operating knowledge centres and associated training. Where SMEs do perform training this is likely to be undertaken by an in-house trainer, often a manager or supervisor. This is likely to be focused on role-specific or essential training such as Health and Safety courses.

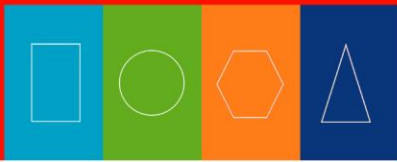
3.4 English Speaking

English is the *Lingua Franca* of international trade. As such, Ireland's English speaking workforce are well placed to facilitate the supply chain both inside and outside the country. It also reduces training requirements as a lack of language skills are not a barrier to employment in the sector, although this may change in the future as developing markets mature.

3.5 Compliance/Regulation

As a long established member of the EU, Ireland has been subject to associated regulations for many years. As such those employed in the sector could be described as more compliant and more knowledgeable in relation to EU regulation than EU accession states.

However, several respondents stated that they did not feel that all freight operators in Ireland (specifically road freight operators) were always operating within the boundaries of the law. It was stated that other established EU road haulage markets were more compliant with regulation than



those in Ireland. Regulations can also have a significant impact on how the supply chain operates. EU Drivers hour's rules, Driver CPC requirements, Cabotage rules and Operator Licensing rules have all had an impact on training and skills requirements in the road freight sector, whilst the EU sulphur directive will have an impact on shipping.

Currently, the maximum sulphur content of marine fuels is limited to 3.5%, but the latest Directive of the European Parliament and Council will limit this figure progressively further for member states to 0.1% in the North Sea and English Channel by 2015 and to 0.5% in other European sea areas by 2020. This will likely affect the routing of certain ships to Ireland. In addition, an eco-tax being proposed for articulated lorries on non-toll roads in France (to encourage higher levels of consolidation) may add to the cost of exporting to France. Regulations not directly related to the sector can also have an impact. For example the lifting of EU milk quota restrictions in 2015 may have a significant positive impact on the food and drink sector.

Within the air freight sector it was reported that regulatory compliance is becoming a lot more focused within the industry and the need for suitably trained and committed staff to this process will be required.

3.6 Industry Bodies

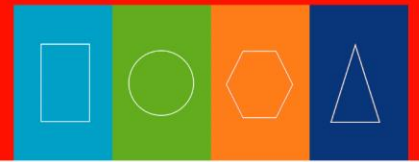
There is a large number of industry bodies related to the sector, both directly and indirectly. These include the Irish Road Haulage Association, the Chartered Institute of Logistics and Transport, the Irish Exporters Association, the Irish International Freight Association (IIFA), Enterprise Ireland and various Chamber of Commerce amongst many others. Whilst this means the sector is well represented and supported there was concern amongst a number of respondents that they were not speaking with a coherent voice.

3.7 Summary

Table 3.3 summarises some of the key strengths and weaknesses of the Irish freight, logistics and distribution sector as identified in the workshops and discussed in this section:

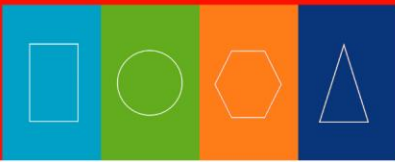
Table 3.3: Strengths and Weaknesses

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Lean sector ▪ Effective import/export ▪ Expertise and pragmatism in the workforce ▪ Sells well ▪ Leading player in multi-modal ▪ Compliance/regulation ▪ People Skills ▪ Flexibility of the sector ▪ English speaking 	<ul style="list-style-type: none"> ▪ Not creating talent from within ▪ Perception of sub-sector ▪ Air freight limitations ▪ A lot of different industry bodies ▪ Trade imbalance - equipment ▪ Transport policy ▪ Non - compliance operations (Road Freight)



It is clear from feedback received that the Irish economy is heavily reliant on the sector and that road, air and sea freight all have a significant role to play in facilitating the movement of goods within the domestic economy and supporting enterprise trade and export growth. Some of the key strengths of the sector include its ability to provide expertise related to multi-modal freight, its ability to support other key sectors and the extent to which organisations are compliant with EU regulations. It is also well represented by a significant number of institutions and associations.

The range of roles offered by the sector means it employs individuals with a variety of skill sets and experience depending on the demands of a particular role. Demand for less traditional sector roles is being driven in part by the growing presence of MNCs, and requirement for professionals to not only be good logistics managers but understand the interaction with roles such as IT, Human Resources and Sales.



Chapter 4: Findings from the Stakeholder Consultations

This section details the current and future trends affecting the sector as identified by the key informant interviews and workshops, corroborated by relevant secondary research where appropriate. The trends affecting skills requirements in the sector can be described as follows:

- The suppressant effect of the recent economic downturn on demand for skills and investment in training;
- Emerging markets and the requirement for a more responsive, agile sector;
- Perception of the industry and the difficulties in attracting skilled employees;
- Cost competitiveness and the ‘race to the bottom’ on price;
- Market consolidation and the growing importance of MNCs;
- Technological change and the resultant demand for upskilling; and
- Sustainability and the ‘green agenda’,

At the workshops, attendees were asked what they felt the threats and opportunities were that would likely impact on the sector between 2014 and 2020. These are also detailed in this section, and their resultant potential impact on skills and training requirements outlined.

4.1 Economic Position

Available positions

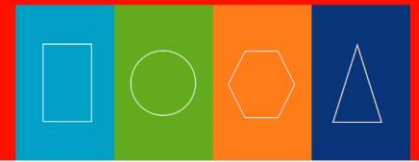
The economic crisis that adversely affected Ireland in 2008 continues to have an impact on the labour market, despite evidence of economic recovery. Feedback from respondents suggested that available positions (particularly those requiring a leaving certificate or lower qualifications) are few and that when advertised can be significantly oversubscribed. As a result there is not currently a shortage of skills availability in most areas at present. Freight Forwarders have been simply attempting to survive during the economic downturn and as such the number of Freight Forwarders that have looking to recruit significantly in recent years is negligible.

“If we advertised a position for a forklift driver in a warehouse near Dublin, we could get over 100 applicants” Large multinational freight organisation

Retention

In part due to the difficulties described above, retention in the sector is strong, with retention loss rates below 5% typically reported. Where there is a lack of positions available generally, employees are likely to remain in positions where they feel more comfortable, as opposed to the uncertainty of a job move. This is beneficial to the sector as it reduces the requirement to train staff as new employees enter the workforce, resulting in more experienced staff and reduced training costs.

Reduced Training and Education



Discussions with education and training providers suggested that as a result of a need to cut costs, investment in external education and training in the sector has reduced since 2008. However, it was reported that there were signs that this is beginning to be addressed and that firms were receptive to becoming involved in training programmes as long as they could be seen to be cost effective and valuable. There is a requirement for online based training, backed up with ongoing refresher training was putting a lot of strain on resources. It was felt that freight forwarding companies are resisting investing in training/upskilling and are more likely to hire people with pre-existing qualifications.

Emerging Markets

The Governments Strategy and Action Plan for Irish Trade, Tourism and Investment to 2015 are to increase the value and diversity of indigenous exports including increasing goods and service exports to existing markets such as in the USA, UK, Germany, and France while at the same time increasing exports to the BRICS countries and the Middle East Region. A review of this Strategy in 2014 also highlighted the need to engage with high growth markets in Asia, South America and Africa.

Ireland's traditional markets of the EU (and the UK in particular) and North America experienced significant adverse economic conditions during the global economic downturn. Even in 2014 growth continues to lag behind that of several emerging major economies. China in particular has seen major growth in recent years, with a burgeoning appetite for the types of high value goods and equipment that Ireland produces. China is already a key origin of imports for Ireland.³⁸

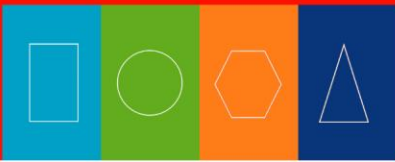
Bord Bia has opened up new offices in Dubai and Spain and they predict increased trade with the Middle East, Southern Europe and Africa. If growth trends continue it is highly likely that the supply chain in Ireland will need to be able to facilitate increasing trade with countries like China, India and Brazil. This will impact on skills requirements associated with the sector as discussed below.

Customs and compliance

Customs procedures are complex and constantly evolving, even for established markets. However, for emerging markets requirements can be more intricate, which makes skills in this sector vital to the efficient movement of goods to and from these countries. The fluid nature of customs requirements means that there is a constant need for refresher training and recent experience.

Within the EU there is an onus on the exporter to make a quarterly return to the Revenue Commissioners, to ensure that VAT liabilities are recorded and discharged in the appropriate country. Importing and exporting to countries outside of the EU requires the use of the Single Administrative Document, which is used within the framework of trade with third countries and for the movement of non-EU goods within the EU. Those facilitating the transport of goods outside of the EU also have to have knowledge of requirements elsewhere, such as China. Considerations such as Customs Registration Codes, Harmonized System Codes and items eligible for duty exemption can all change. Whilst within the EU, customs auditing is not generally undertaken at the border it is audited retrospectively. If it is found that goods have been classified or mis-declared this can lead

³⁸ Observatory of Economic Complexity <http://atlas.media.mit.edu/profile/country/irl/>.



to retrospective fees and fines and organisations can even be found to be acting illegally. Recently, customs officials have been given greater powers to administer penalties.

There was feedback from stakeholders that entry requirements relating to those working in customs are inadequate and that staff are insufficiently trained. This leads to problems with the classification and valuing of goods.

Tax arrangements and tariffs, goods classification, clearance processes, setting up and maintaining deferment accounts and duties are all areas which exporters may need to be familiar with. To assist the process, software has been developed, although the user will still need to have knowledge of customs and compliance procedures to use it effectively.

However, there is no formal requirement for the roles that necessitate customs knowledge to have a formal qualification. The US is one of the few countries where there is a brokerage licence requirement. There are online courses in the US that include compliance, strategic decision making and export controls.

To raise standards a legal entity established in the EU, whatever the size of their business, involved in activities covered by customs legislation and forming part of the international (trade outside of the EU) supply chain can apply for Authorised Economic Operator (AEO) status. This accreditation was well received by key technology providers in Ireland, although it was viewed as not having enough associated benefits at present but this is expected to change with reduced guarantees required for AEO operators and certain organisations only prepared to work with those who have AEO accreditation. The AEO programme is primarily a trade facilitation measure. Operators established in the EU that meet specific qualifying criteria, may apply for and receive AEO certification. The aim of the AEO programme is to enhance security through granting recognition to reliable operators and encouraging best practice at all levels in the international supply chain.

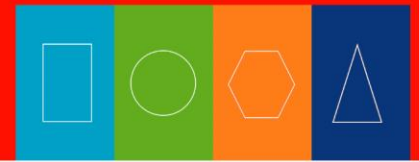
It was reported that previous attempts at standardising knowledge level regarding customs workers were unsuccessful due to revenue resistance and smaller indigenous companies concerns over cost; particularly as freight forwarding (a role that requires customs knowledge) is a low margin industry.

There is concern regarding the value of courses currently on offer regarding customs. It is considered that courses currently provided are too high level and availability is mainly restricted to London and Brussels based bodies like C5 and the World Customs Organisation. Freight Forwarders may not see value in sending employees over for the price, when the return is simply a certificate of completion. Modules are currently on offer as part of broader courses, however these were considered not comprehensive enough. Increasingly customs is facilitated electronically, rather than the completion of physical forms as was the case previously. This requires a greater knowledge of the use of IT and associated software. However discussions with technology providers suggested that checking a proportion of physical goods movements would always be required.

Key informants were keen to stress the importance of qualified individuals in the sector as it was felt that the lack of an entry requirement and skilled and qualified staff to train new entrants was serving to restrict up skilling of Freight Forwarders in customs procedures.

Cultural awareness

A requirement for 'soft skills' was a common response from stakeholders. Sensitivity and awareness of working practices, etiquette and protocol in emerging markets was seen as important and not necessarily addressed by existing training and education courses. As the supply chain directly links



producer to customer those who work in the sector may come into direct contact with customers from emerging markets. Business culture in countries like China is unlikely to become a clone of western business practices in the short term and as China becomes increasingly economically powerful any pressure for change will probably diminish. Businesses in China depend heavily on personal relationships.

Agility

Emerging economies can quickly deteriorate, political sensitivities could emerge or new markets can suddenly appear. The supply chain in Ireland needs to be agile enough to react to those changes to ensure that exporters are able to respond and capitalise on opportunities as they emerge.

This has skills requirements as those involved in the supply chain will need to be flexible, have knowledge of associated markets and be able to quickly respond to the changes described.

Centralising supply chain management - 'centres of excellence'

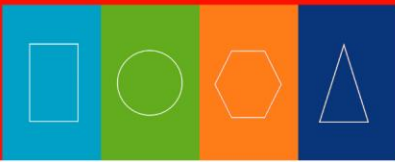
A supply chain is a network of suppliers, production facilities, warehouses and markets designed to acquire raw materials, manufacture and store and distribute products among the markets. Organisations often have complex supply chains and operating them optimally becomes a challenging task. One of the major problems in managing supply chain networks is the lack of collaboration among the different entities including raw material suppliers, production sites, warehouses and retailers. In an increasingly diverse marketplace, freight, distribution and logistics operators are looking to centralise management of their supply chains in particular territories. It can be beneficial to adopt centralised control and develop a mechanism to coordinate the decentralized system so that each player in the chain is benefited. Centralised supply chain management can be found in countries that have expertise in distribution and logistics and usually occur in mature freight markets. It can facilitate the movement of goods that do not travel through (or anywhere near) the country the supply chain is being managed from. Feedback from stakeholders suggested that given it has expertise in handling multi-modal freight means it is well placed to host supply chain management as it currently does in certain key sectors.

Growth in this area will require an increase in higher end skills in the sector and supporting skills such as software development, contract law, finance and process engineering.

4.2 Image of the industry

A common response from the primary stakeholder consultation was that the image of the sector was poor. The sector was not seen as attractive to work in and as such companies were struggling to attract the best graduates. Low pay in certain areas (such as Freight Forwarding and traffic office staff) meant that certain roles were not seen as a career for graduates. Few organisations have a Supply Chain Director on their boards.

"If we had a stand at a careers fair alongside high profile IT companies we would have a lot of literature left at the end of the day"- Large multinational freight organisation.



It was reported that some graduates from courses associated with the sector do not ultimately choose to work in related professions. A career in the sub-sector is seen as 4th or 5th choice option for some graduates.

The sector also suffers from a low profile generally, with little knowledge of how it operates and opportunities for careers associated with it. This can be attributed in part to a lack of marketing of careers in the industry and the service it offers, aside from parcel companies such as Fed-Ex and DHL. Knowledge of careers in the sector is often restricted to awareness of traditional roles such as HGV drivers, which are not attractive to many in the workforce as it is seen as long hours, stressful driving conditions and poor pay. However, there is a positive view of most jobs for example lorry driving, which often has a modern vehicle, a chance to see the country and once away from the depot is not directly overseen by management.

Where an organisation has a profile beyond the sector (e.g. a food/drink or technology provider), there is less difficulty in attracting staff. Those organisations can offer employees experience in different areas of the business.

It was reported that there was a lack of supply chain related modules on business degrees and when companies are looking for graduates from degrees such as those focused on business, they often find that there is a lack of a basic knowledge of the supply chain and how it operates. Businesses are then required to undertake extensive in-house training to address the skills shortfall, with associated cost and resources implications.

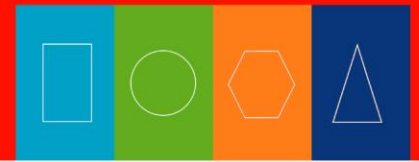
Even within sectors, such as pharmaceuticals, that heavily rely on an effective supply chain the perception of the freight distribution and logistics sector is poor. This is despite the requirement for an agile, secure, often rapid and efficient supply chain to get their products to customers across the world.

“Logistics is now a boardroom issue and not just a loading bay issue.”

However it was felt that the perception of the supply chain manager being unimportant was changing. Logistics is being recognised as a strategically important business function which will lead to a stronger focus on education and training and there is likely to be pressure on operators to be more professional. Logistics has become more complex and therefore, more knowledge intensive and it was reported that the workforce needs to be trained accordingly. In the past logistics has had a narrow view towards staff training and that employees in the lower level of the industry have a narrow perspective of what the industry does, with little understanding of the end product.

4.3 Cost Competitiveness

The supply chain is not a ‘value added’ element of production and as such it is often the subject of attempts by consigners to reduce costs. Since the economic downturn in 2008 there have been efforts by those in the supply chain to reduce costs, in order to compete on price. Similarly there has been pressure from producers to maintain profitability by reducing costs. As such ‘lean skills



(e.g. solutions to waste) have become important. This has led to the emergence of a ‘leaner’ sector, which may focus on price at the expense of optimising the efficiency and effectiveness of the supply chain, with emphasis on the visible. As a result the role of finance and the associated skills requirements have become increasingly important in the sector, with margin erosion now a key factor in the industry over the last 5 years. There was concern that there is too much of a focus on price, with the potential to impact on other vital aspects of the supply chain such as safety and that lean principles could be applied sub optimally. There was concern that this could have a detrimental impact on Ireland’s economy in the long term. Improved communication between suppliers, supply chain organisations and customers in addition with improved collaboration helps to reduce inventory throughout the supply chain, ensure there is less of an impact on the environment, as well as cutting costs across the board.

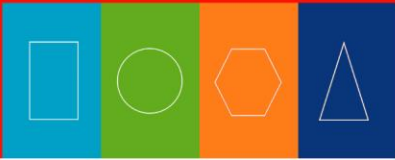
4.4 Consolidation of Key Players in the Industry

Mergers and acquisitions in the sector and the emergence of MNCs have led to a consolidation of key players in the industry. Although SMEs still perform a vital function in the sector, consolidation and resultant economies of scale offer an opportunity to create improved career pathways and a greater focus on structured training and education. It was suggested that competition was affecting the ability of smaller operators to collaborate. There are factors that hinder supply chain collaboration - competitive companies not wanting to work together; identifying who pays what cost; and coordinating service requirements to name a few. However, even when those issues are resolved, collaboration initiatives are often vetoed by the marketing department using the argument of “how can we protect our brand if it is being distributed with a competitor’s products”. MNCs and larger organisations can have a greater influence over education and training provision than individual SMEs, allowing them to influence course content to a greater extent.

4.5 Technological Change

Technology has long driven skills requirements in the sector, with the increasing automation of warehousing, use and sophistication of IT, Radio-frequency identification (RFID), Real time location systems (RTLS) and in-cab technology just a few of the initiatives introduced in recent years. In rail freight there has been investment in track and associated telecoms as traditional level crossings still operate that require manual operation. Technological change is continual and awareness and understanding of these changes will need to be addressed with the relevant people who come into contact with these changes, which will require greater focus on training. Increasingly there is a desire from customers for up-to-the minute information on where their consignments are. This affects all modes, and it encouraging organisations to offer track and trace facilities.

A common response from stakeholders was that many of those who work in the sector, particularly at entry level positions lack even the most basic IT skills. This can have an impact on the performance of the individuals and the productivity and effectiveness of the associated operation. It was heard that many Eastern European migrants had superior IT skills to that of native Irish workers in entry level positions. Those skill-sets enable skilled workers the ability to quickly progress to higher positions in the organisation. The effect of technological change is seen in the improved management of information and data, and the shortening of the value chain. Changes to IT are



likely to have a significant impact on Freight Forwarders including the use of 'big data'. 3PLs are evolving into technology providers with their own software, and it was considered that FFs need to follow that model.

4.6 Sustainability

At the outset of the study it was anticipated that efforts to improve the sustainability of the sector would significantly influence the demand for skills and training. Consultations suggest however that the economic downturn has suppressed to some extent initiatives aimed at 'greening' the sector, especially in the public sector. It was felt that a prolonged recovery and an increasing understanding of the real impact that climate change is having will increase pressure on the FTDL sector to be more sustainable. This may include the increasing use of electric vehicles, use of compressed natural gas for freight, enhanced requirements for carbon reporting, more stringent EU regulations and pressure for reduced use of air freight.

4.7 Current Education and Training Provision relating to the sector

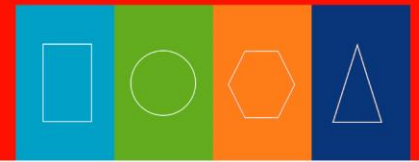
Given the variation in roles throughout the supply chain, skills and training requirements differ significantly and entry level requirements demand different levels of qualifications.

Lower skilled roles such as warehouse operatives, drivers and forklift truck operatives often do not require specific qualifications as it is expected that training will take place on the job and be focused on the specific task the employee is expected to perform. Freight forwarding is an area where there is no formal qualification requirement, although training is then provided by the IIFA who facilitate the *Federation Internationale des Associations de Transitaires et Assimiles* (FIATA) Diploma qualification. There is also a focus on Health and Safety training, given the potential for accident or injury to occur in associated working environments. This generally exceeds common minimum standards. Higher skilled roles such as supervisors and strategic positions such as software developers or those involved in finance are often filled by staff with a degree-level education.

Feedback suggested that managerial positions are often filled by individuals who have worked up from entry level jobs, initially undertaking lower skilled roles. There was a feeling amongst respondents that management skills can be honed but not learned. Individuals with people skills are at a premium in the industry, despite their importance throughout the supply chain. Relationship management was reported to be more important than other skills. Larger organisations, both in the public and private sector may have their own training centre and dedicated staff. They may also have their own programme for developing staff and facilitating their progression through the organisation, such as apprenticeships. Feedback on current training and education provision was mixed, with a number of respondents reporting dissatisfaction with the current offer and the standard of courses. However, institutions such as the Dublin Institute of Technology received praise relating to the standard of graduates.

4.8 Skills Requirements

It was stated that the supply chain in Ireland needs individuals who can apply innovative techniques. It is data driven, with the requirement to identify and develop responses based on 'big data' and



systems outputs. As a result skills in statistical analysis are also important. Graduates were also said to lack ‘soft’ skills. It was described as hard to source managers with analytical skills. These individuals were reported as not coming from ‘shop floor’ routes. It was reported that an effective supply chain needs individuals that are trained in a variety of fields such as:

- Software Development; Technical Support In IT; Risk Management; Contract Law
- Finance; Marketing; Sales Process Engineers; Business analysis; Entrepreneurial
- Operational Good Practice

Even at lower levels, skills in warehouse handling, dangerous goods acceptance, pharmaceuticals handling, forklift truck driving and security screening (with regards to air freight) are all required in various fields. It was reported that export sales teams in the food industry have limited knowledge of costs of new transport movements, which requires cross functional training. In addition there is perceived to be a lack of logistics consultants in Ireland. Those involved in sales can create issues for logistics by trying to push through inadequately costed deals.

How individuals are recruited in the sector is heavily dependent on the role, qualification level required and the skillset of the prospective employee. Individuals in many lower skilled positions are hired in response to their “attitude” rather than any skills they may have coming into a job in the sector, although by showing attendance on a course could help demonstrate this. Generally, supervisory and technical roles are filled by graduates, who start in line management (often with a logistics qualification) and learn the role of managing staff. Depending on the company there may be an internship that incorporates other elements of the business.

It was reported that many of those who work in the sector are not willing or able to progress from lower skilled positions. A typical career progression would commence from an ‘on the ground’ position, move up to a line manager, then shift supervisor before becoming an operations manager. Bringing in employees with required skills was felt to be a good idea and can have both a positive and negative impact on existing employees. Many new employees are taken on through referrals of existing employees at a lower level. There are also a number of good colleges used to feed into organisations. Recruitment websites and agencies are also used.

4.9 Opportunities and Threats 2015-2020

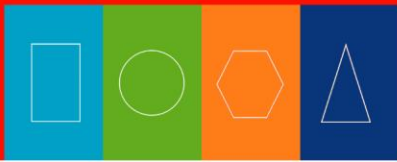
Workshop stakeholder attendees were asked what they saw as the potential opportunities and threats that could affect skills and training requirements up to 2020:

Potential Opportunities

Economic Growth

The success of the freight, logistics and distribution sector is seen as being closely aligned to the economic performance of Ireland. Without economic growth, the demand for freight services is suppressed and without the support of the subsector economic growth is constrained.

Therefore, the signs of economic recovery in Ireland represent an opportunity for renewed growth and demand for skills in the sector.



Growing Agenda

Feedback suggested that the role of the supply chain and its importance to the Irish economy was growing and that the sector in Ireland was 'catching up' with more developed sectors in countries such as the Netherlands and Germany. Supply Chain Directors now sit on the board of several larger organisations.

Enhanced role for women

Women are far from proportionally represented in the sector and as such there is an opportunity to enhance to the role that females can play. This requires greater efforts to market the industry to prospective female entrants and support them during their careers in the sector. In the UK there is a lobby group called 'women in logistics' that carries out this role.

Low cost model for air freight

'No frills' airlines have transformed passenger air travel, driving down costs and making flying accessible for more people. It was stated that there was an opportunity to apply those principles to air freight and thus enable it to compete more effectively with other freight modes. Although it is recognised there is about a 10:1 ratio of air to sea rates so this is less likely.

Technology

It has been demonstrated that technology is driving changes in demand for skills and training in the sector. It also represents an opportunity for greater efficiencies and enhanced offer. For example, new refrigerated container technology can improve the ability of foodstuffs to be containerised and transported.

Central Distribution Centres

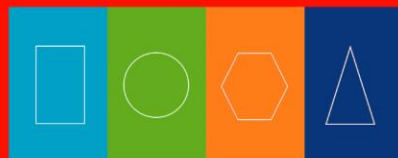
Ireland's location, whilst peripheral in Europe, could represent an advantage when considered globally. In the same way that the UAE has become a hub for global air travel, Ireland could perform a similar role, acting as an East-West link for freight, in particular air freight.

International Centre of Excellence for the Supply Chain

As discussed, Ireland's expertise in multi-modal freight and distribution is a clear strength and feature of the sector. Increasingly, organisations are looking to consolidate management of their supply chain in a single location in response to increasingly complex arrangements and demand for ever greater efficiencies. The optimum location for such a facility is an expert, English-speaking member of the world's largest currency union.

HGV Driver Apprenticeship Scheme

Several European countries such as Germany have driver and transport apprenticeship schemes. The Irish Road Haulage Association (IRHA) is currently developing an HGV Driver apprenticeship scheme and is preparing a curriculum setting up the first ever such scheme in Ireland. They want to



encourage school leavers to become trainee apprentice drivers and progress a planned driver training program over 3 to 4 years. The IRHA are liaising with SOLAS to develop the scheme.

Overall , the anticipated opportunities and their likely impact on skills and training provision are summarised in Table 4.1.

Table 4.1 Potential Opportunities 2014-2020 and their impact on skills and training provision

Opportunity	Potential impact on skills and training provision
Economic Growth	Increase demand for skills associated in the sector across all modes and skill levels
Growing Agenda	Increased demand for those with supply chain experience who can be effective at the strategic level.
Enhanced role for women	Increased available workforce
Low Cost Air Freight Model	Skills requirement shift towards air freight
Technology	Skills and training in IT across all grades
Centre of Excellence	Increased demand for supply chain management roles and international customs requirements
HGV Driver Apprenticeship Scheme	A greater number of better trained HGV drivers coming into the industry.

Source: AECOM

Potential Threats

Imbalance of Trade

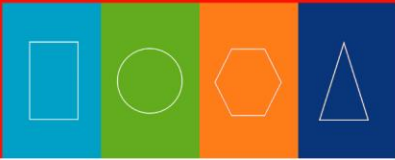
The imbalance of trade can cause difficulties in relation to the availability of equipment required to facilitate exports. For example a lack of containers coming into the country can cause difficulties and additional expense for those looking to export via containership. It was heard that a lack of equipment was directly affecting investment decisions in Ireland.

Potential Changes in Legislation

It was suggested that any changes to legislation, (e.g. cabotage rules) may have an impact on the Irish freight sector by opening up the market to foreign competition.

Resistance to change or innovation

Resistance to change and innovation was described as a potential threat in the workshops. If the sector does not react to changing requirements, technology and working practices then this will impact on the competitiveness of the sector and the wider economy.



Economic Decline

The demand scenario exercise (Section 7) shows that economic activity in the sector is closely aligned to GDP. It can therefore be assumed that any reduction in economic activity would have a resultant negative impact on the demand for freight and logistics services.

Lack of suitable trainers to upskill staff

The quality of training offer is essential in ensuring that associated courses have the desired impact in upskilling staff, with resultant improvements to the associated organisation. If there is a lack of individuals who are able to train effectively, this will have an impact on skills in the sector.

Training funding issues

With margins under pressure in the sector, there may be pressure to reduce the amount of non-essential training to reduce costs. This may have the effect of greater costs in the sector in the long-term relating to inefficiencies associated with unskilled staff.

Lack of HGV drivers

A significant proportion of HGV drivers in the industry are approaching retirement. As almost every product is transported by road for at least a small proportion of its journey, the risk of a driver shortage is a significant one. It may also act to increase wage demands for those drivers still in the industry, increasing costs associated with the supply chain.

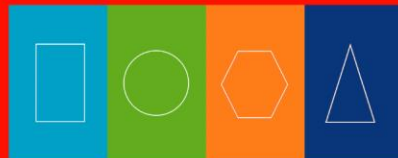
Table 4.2: Potential Threats 2014-2020 and impact on skills and training provision

Potential Threat	Impact on skills and training provision
Changes in legislation	Dependent on nature of change. Changes in cabotage rules (for example) could reduce demand for Irish road hauliers
Resistance to change or innovation	Sector to become less competitive
Economic decline	Reduced investment in skills and training, reduced demand for employees in the industry
Lack of suitable trainers	Poor quality and ineffective training preventing sufficient up skilling
Training funding issues	Lack of investment in skills and training
Lack of HGV drivers	Wider impact on overall economy, enhanced requirement for trained drivers

Source: AECOM

4.10 Summary

There are several current trends and issues in the sector which are affecting skills and training requirements. In order to attract a high calibre of staff throughout the FTDL sector, it is crucial that the poor image of the sector is addressed, alongside a similar effort to achieve esteem parity between vocational occupations and those reached through tertiary education. On this front, some



work has already been undertaken, with a number of campaigns having been held across the globe to try and promote the industry. Common features of these campaigns involve career days, interactive challenges, and related video games. In the UK examples are “*Delivering for Your Future*” and “*Made in China Challenge*”, with “*Hallo Zukunft*” in Germany or “*Nederland is Logistiek*” in Holland providing European comparators.³⁹

Case Study: “Business on the Move”

It is important to bring the sector to the attention of students as a potential career path before they leave school. As part of a campaign to highlight the sector to younger children, a family board game “*Business on the Move*” has been developed in co-ordination with the CILT (UK) to demonstrate how the supply chain works to children from the age of nine.⁴⁰

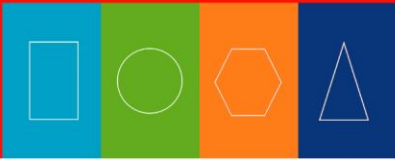


Figure 1: “Business on the Move”

The economic situation has arguably had the impact of suppressing the sustainability agenda, which may increase in importance as the economic situation improves, fuelling the demand for skills in the areas of carbon reporting and greening operations. There are immediate issues that require attention, including those relating to customs skills and the growing requirement for IT and people skills. This should inform the content of education and training courses in the short-term. This is best initiated through a co-ordinated approach via industry associations. There is also a requirement for more graduates to enter into the profession so that there are enough managers, planners and associated office workers with adequate skills. These skills will need to be broad-based, incorporating e-skills, languages, flexibility and cultural awareness of global differences as Ireland integrates further into the global economy as a product of globalisation. There is a need in transport and warehousing operations for a consistent supply of operatives and drivers. Within firms these skills need to be nurtured and developed throughout the workforce though the improved provision of training and support for lifelong learning.

³⁹ International Review of Actions by Selected Countries to Develop and Attract a Supply of Talent in the Freight Transport, Distribution and Logistics Sectors, August 2014.

⁴⁰ “Business on the Move”, Logistics and Transport Focus, August 2014 (Volume 16, 8), p.11.



Chapter 5: Key Findings from Company Consultations

5.1 Introduction

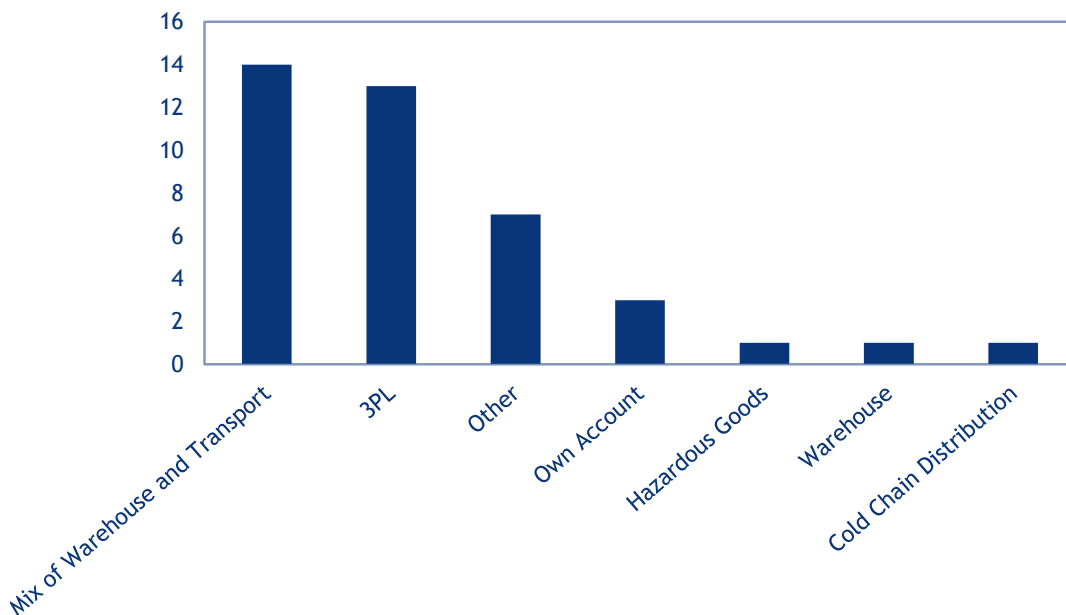
This section reports on the analysis of the primary survey data collected from 40 companies in the Irish Freight, Logistics and Transport sector. A structured sampling approach was developed that ensured feedback from a cross section of respondents representing all aspects of the FTDL sector was captured. A structured survey questionnaire was designed to elicit the necessary information.

5.2 Analysis

Types of company

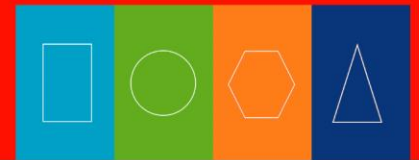
Figure 5.1 shows the variety of companies where survey data was collected from. Of the 40 company consultations undertaken, approximately one third of companies described themselves as a third party logistics company (3PL) and another third were a mixture of logistics and warehousing. The remaining third were a combination of: own account operators, hazardous goods specialists, warehousing, cold chain distribution or other types of companies. Other types of companies included two freight forwarders, one port operator, one vehicle transporter and one airfreight operator. The fact that the majority of operators are focused on road freight reflects the importance of road freight to the supply chain in Ireland.

Figure 5.1: Types of Companies Surveyed



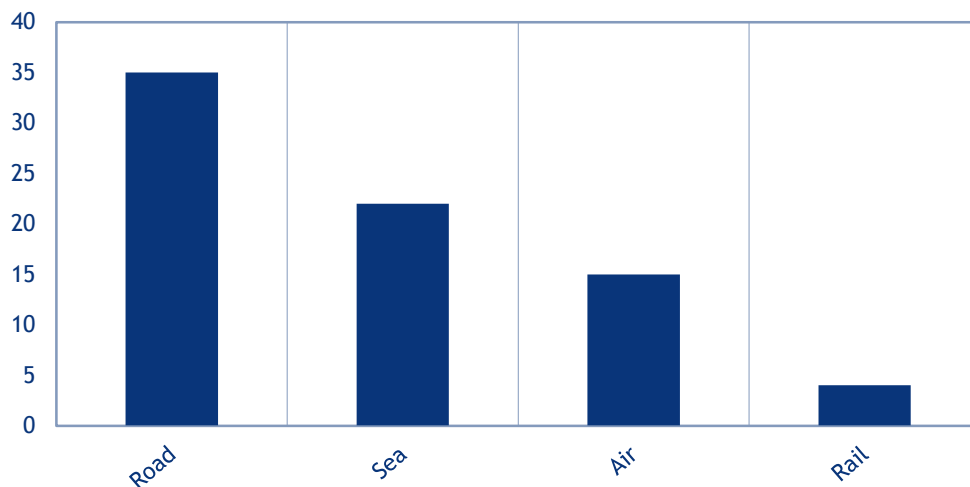
Source: AECOM

Figure 5.2 shows the various modes that the enterprises surveyed used in their freight transport operations. Companies were most likely to use road transport (88%) as one of their main modes. Rail transport use was the least common (10%), while air and sea were used by 38% and 55% of companies respectively. This demonstrates the importance and knowledge of multi-modal freight in



Ireland and it is expected that a comparison with centrally located European countries would show that their use of air and sea freight would be much less than in Ireland, albeit with greater use of rail freight.

Figure 5.2: Types of Transportation Used



Source: AECOM

In terms of goods handled, there was wide variation across the 40 companies surveyed. Some specialised in specific goods such as oils and lubricants or drink whereas others were involved in the handling of a multiple of products. For example one haulier said that they handle “*everything from computer parts to beef*”. Table 5.1 presents a breakdown of the goods handled by the companies surveyed. This demonstrates the flexibility and agility of the FTDL sector in Ireland, able to respond to customer demands and transporting a variety of goods via differing modes of transport.

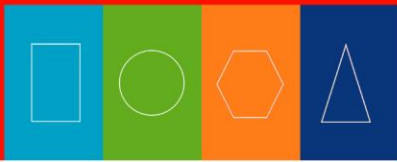
Table 5.1- Type of Goods Handled

Goods Handled	Number of companies
Pharmaceuticals	16
Food	13
Drink	12
Chemicals	14
Electronics	14
Medical Devices	15
Agriculture	11
Other	16

Source: AECOM

Staffing

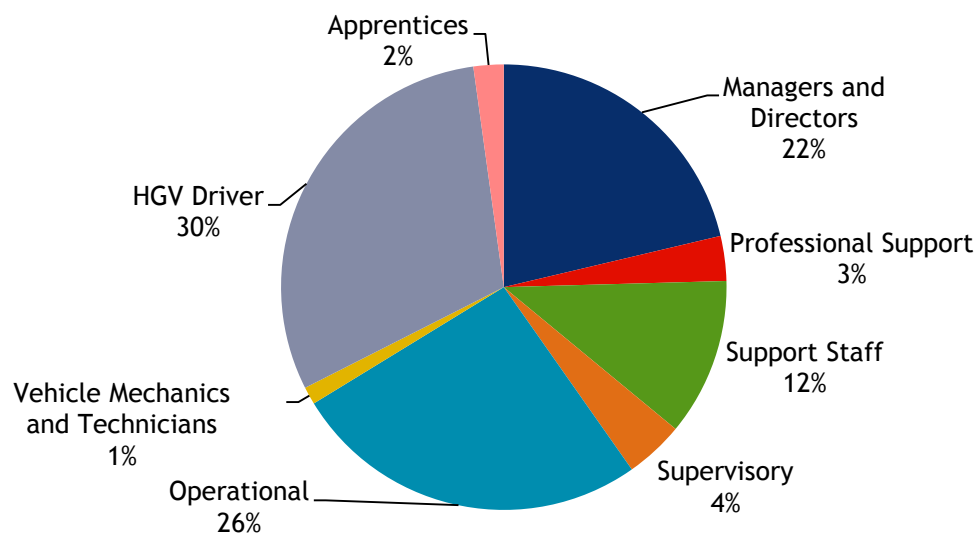
Figure 5.3 provides a breakdown of staff employed in various roles from the 40 companies surveyed. A significant proportion of staff within these enterprises are employed as drivers (30%). This is likely



due to the fact that 88% of the companies surveyed were involved the use road transportation. It is likely that the actual proportion of staff employed as HGV drivers could be higher as some 3PL companies surveyed did not provide driver employee figures. Further to this, there could also be a proportion of drivers who are indirectly employed through employment agencies or contracted as owner operators. Therefore, any anticipated shortfall in HGV drivers can be described as significant.

Manager and Directors (22%), Support Staff (12%) and Operations Staff (26%) were the other most common employee roles. The remaining job roles were less prevalent within companies, with Apprentices, Supervisors, Professional Support Staff and Mechanics or Technicians each accounting for less than 5% of employment within the organisations surveyed, albeit performing vital roles.

Figure 5.3: Staff Employment by Role in companies surveyed



Source: AECOM

Figure 5.4 shows the age profile of employees for various roles for companies who were able to provide this data. This demonstrates that HGV drivers form the highest proportion of staff aged over 55, which will need to be replaced within 10 years. This statistic is typical for many European countries and is representative of the fact that there are more HGV drivers leaving the industry than joining. The higher proportion of older staff (45+) in managerial positions can be expected due to the level of experience required in these positions.

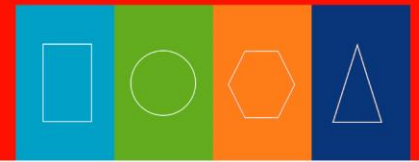
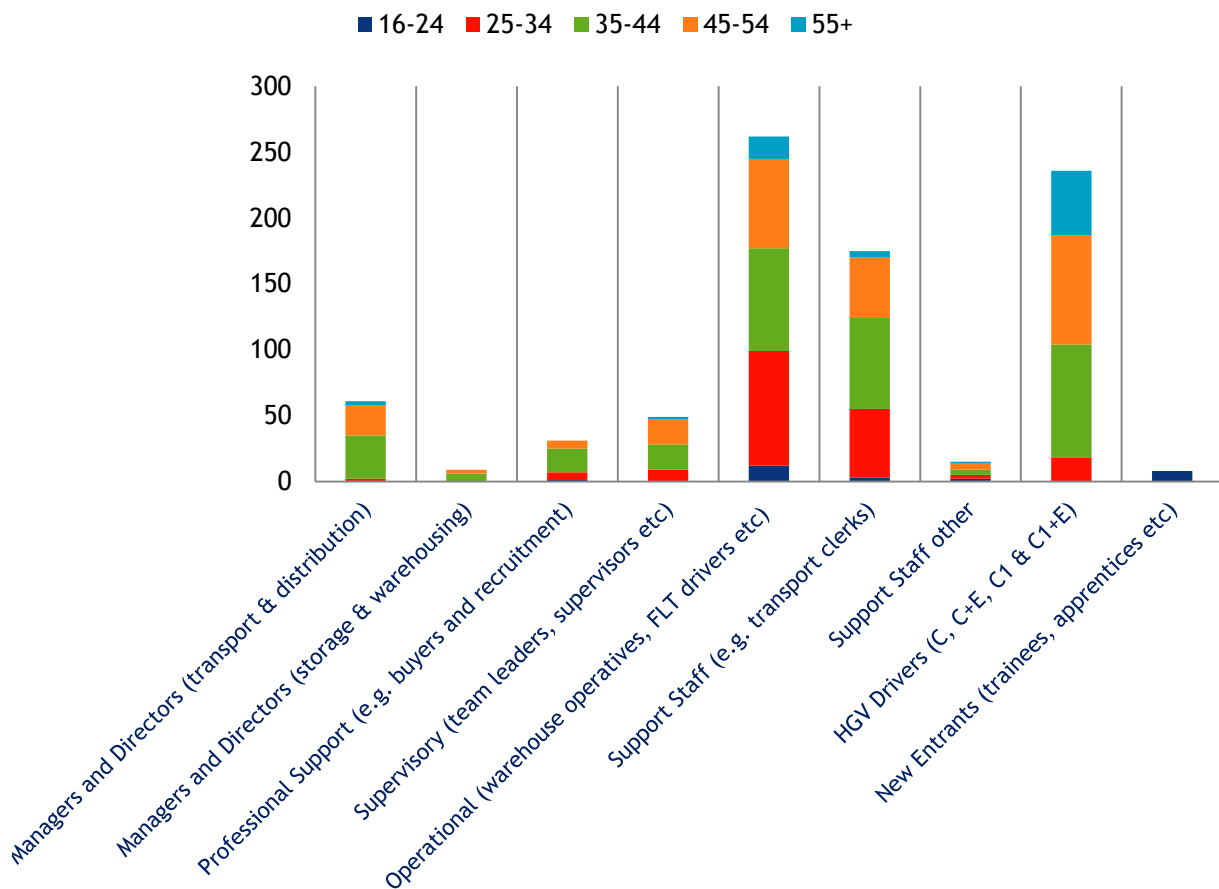


Figure 5.4: Age profile of employees in companies surveyed (Based on 846 employees)

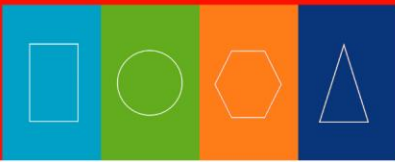


On the whole, respondents were uncertain as to whether there would be a change in staff breakdown as roughly half responded that they didn't know. One quarter of respondents answered that there would not be a change in the staff profile. The remaining quarter indicated that there would be a change in the staff profile and some comments they provided were:

- Increase in both drivers and warehouse staff;
- Increase in drivers
- Extra warehouse operatives and administration support;
- 'We will be looking to recruit young IT professionals that can manage systems and information transfers
- 'We plan to double staff numbers in 5 years'

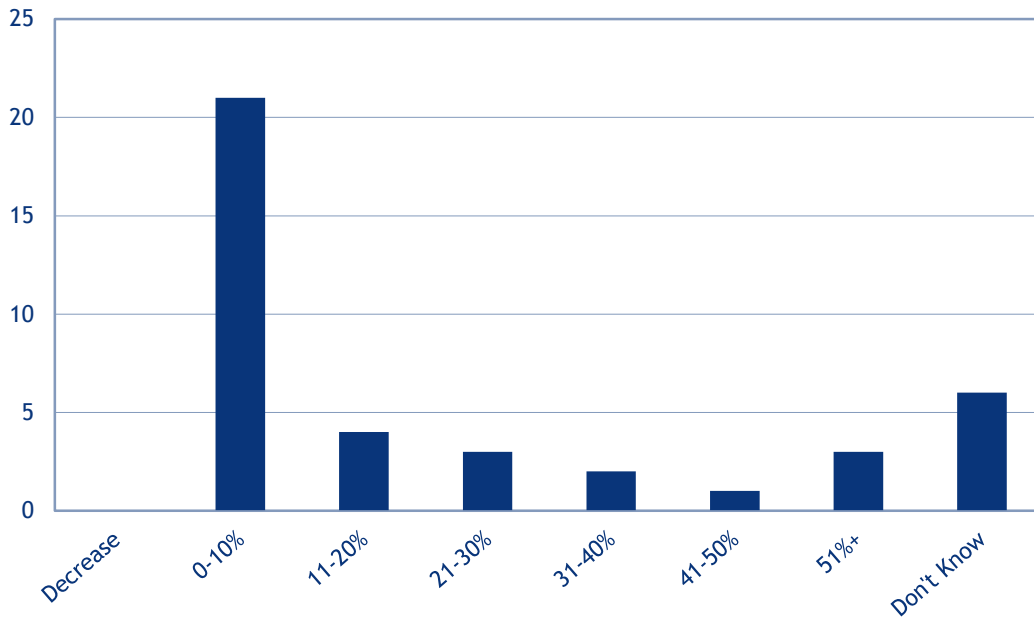
This lack of consensus suggests that there is uncertainty as to how the staff profile will change in light of the now growing economy

Figure 5.5 shows respondent's estimations for the growth of the workforce at their companies. 85% of respondents indicated that they believe that staff numbers will increase over the next 5 years, while no respondents suggested that staff numbers would fall. Over half of respondents (53%)



believed that staff levels will increase by up to 10%, while further estimations varied between 11% and 51%. There was some uncertainty regarding workforce growth as 15% stated that they “don’t know” what will happen. This can be linked to the growing nature of the economy, and the difficulty to predict future business requirements.

Figure 5.5: Anticipated Growth in workforce to 2020 in FTDL companies surveyed

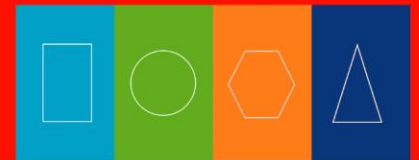


Source: AECOM

Employee Skills and Recruitment

Respondents were asked where they hire new employees from and if there are any particular skills or qualifications which they require for specific roles:

- **Managerial Roles-** experience and leadership were given as the most important skills. One organisation said that they look for candidates with a diploma in logistics. Managerial roles were often filled by existing employees, or through business networking or agencies.
- **For operational roles** previous experience, computer literacy and people skills were stated as skills companies look for. Respondents stated that they use recruitment agencies and FÁS Employment Services (now Intreo) to fill operational vacancies.
- **HGV Drivers-** respondents stated that they require the relevant licence for HGV Drivers and most look for a clean licence. Other skills or requirements for HGV drivers included: CPC training, ADR training and good references. Respondents stated that HGV Driver roles are often filled by word of mouth, although agencies and the former FÁS were also used.
- **Other skills** that respondents look for included: manual handling training, food training, experience using equipment and sector specific experience (e.g. airfreight). Notably, several respondents said that training was done internally suggesting that some organisations expect to provide the necessary training to new starters.



Respondents were asked if there were any issues recruiting staff. While the majority of respondents indicated that they did not have problems recruiting for particular roles some 40% highlighted particular roles. Table 5.2 shows the particular roles which respondents reported as being difficult to recruit for. Within this group, almost one quarter indicated that sales roles were difficult to recruit for, while 18% reported problems with HGV Driver recruitment. Further to this, 12% highlighted issues with recruitment for Operational Roles and Transport/Logistics Managers. There were also reported issues in the recruitment of Administration Staff, Junior Roles, Business Analysts, IT Graduates, Freight Forwarders and Garage Staff which each represented 6% respectively.

Given that not all of the companies surveyed recruit individuals in each of the respective roles, it is likely that the recruitment issue is greater than the data suggests. If the case of driver recruitment is considered, it is likely that the magnitude of the problem will increase over the coming years as the Irish economy begins to grow. This issue will be compounded by the ageing profile of drivers shown in Figure 5.4 and a lack of young people entering the industry.

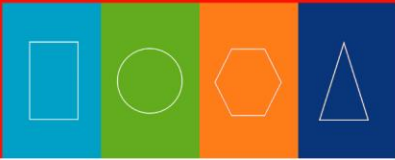
Table 5.2: Difficulty Recruiting for Particular Roles in companies surveyed

Role	Number of Respondents
Sales Roles	4
HGV Drivers	3
Operational Roles	2
Transport/Logistics Managers	2
Administration Staff	1
Junior Roles	1
Business Analyst	1
IT Graduates	1
Freight Forwarders	1
Garage Staff (VTN Testing)	1

Source: AECOM

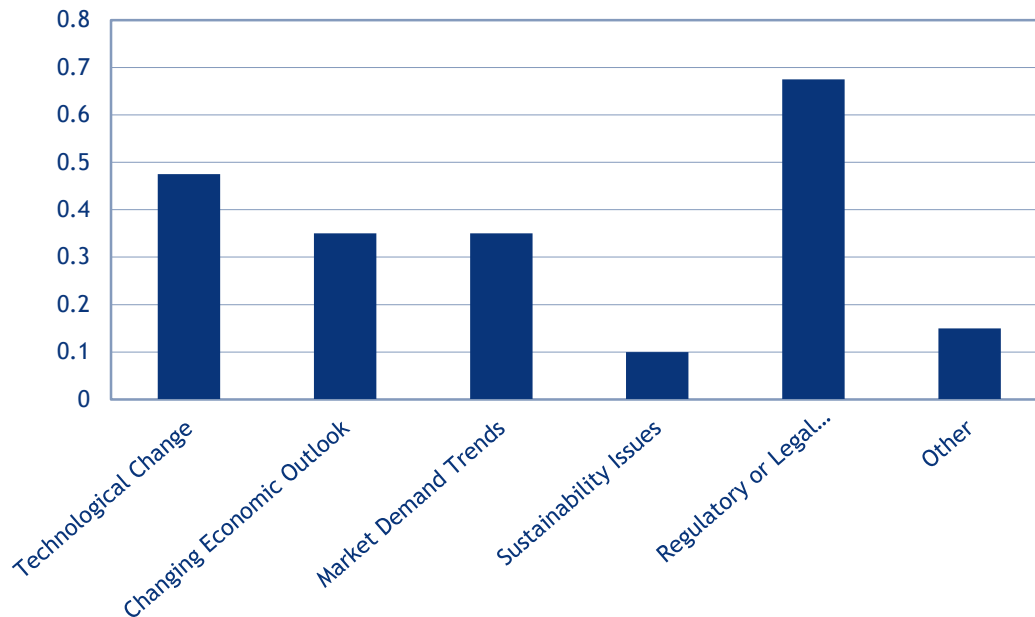
Drivers of Change

Respondents were asked what they believe will be the main drivers of change for the sector's employee skill requirements over the next couple of years. Figure 5.6 indicates the main drivers of change. The most common response, given by over two thirds of companies, was regulatory or legal requirements. Technological Change was the second most common response, given by just under half of respondents. Changing economic outlook and market demand trends (often linked) were both given as drivers by just over one third of respondents. Given the positive response to the question related to growth in staff numbers it can be assumed that changing economic outlook is perceived to be overall growth in this instance. Market Demand trends can reflect instances such as the reduced demand for the physical supply chain from the technology sector or growing demand for Irish produce. Sustainability issues were seen as a less relevant skill requirement, mentioned by just 10% of respondents, reflecting the dampening effect that the economic crisis has had on the sustainability agenda. Fifteen percent of respondents indicated that there were other drivers for



change. These additional drivers were: Knowledge, Health and Safety, Changes in Government Purchasing and Logistics, and increased demand for ‘Added Value’.

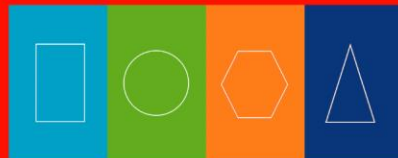
Figure 5.6: Drivers of Change in the Freight Sectors Skill Requirements



Source: AECOM

When asked to expand on their answers, respondents stated the following:

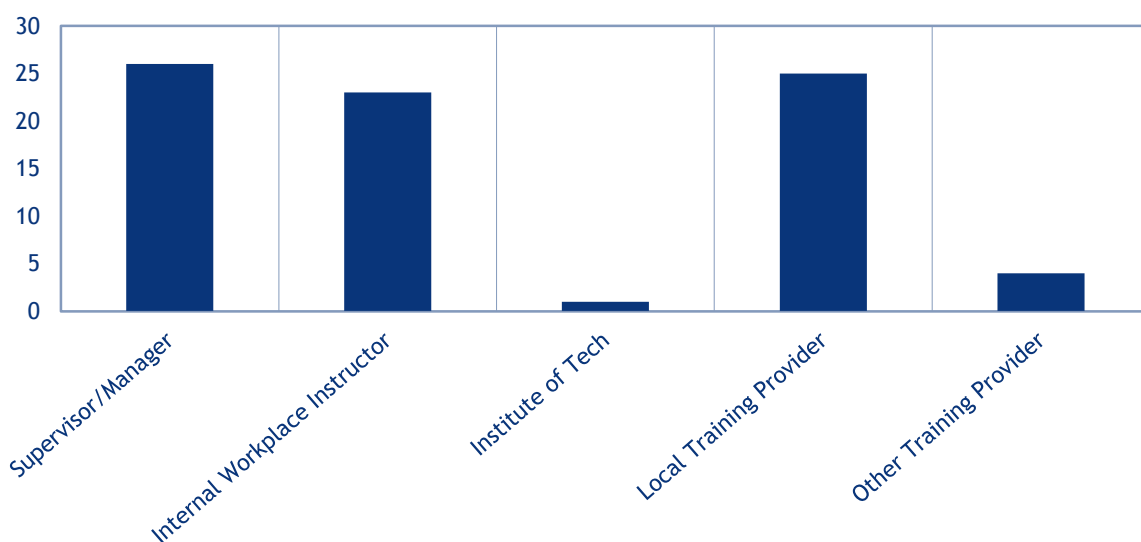
- *‘The majority of our employees and throughout the road transport industry (with the exception of female office staff) are primarily early school leavers and became employed at a very young age, that age today would correspond to 16. Only the UK seems to recognise this fact and has a number of 16 year olds in apprenticeships. There are a large number of young people who would enjoy work and being around trucks and warehousing if given an entry point.’*
- *‘Regulatory compliance is becoming a lot more focused within the industry and the need for suitably trained and committed staff to this process will be required. Technological change is continual and awareness and understanding of these changes will need to be addressed.’*
- *‘The shipping lines are creating new charges/revenue streams which is making transport very expensive and therefore much more risky. Secondly, due to outsourcing, dealings with shipping lines have become very impersonal.’*
- *‘With the new EU GDP guideline in effect, it may be difficult for companies to interpret how the guidelines affect their operation. With inventory management tools such as SAP becoming increasingly popular, sufficient training will be required.’*
- *‘Freight offerings will move to more complete supply chain offerings which will demand greater use of technology and a greater understanding of supply chain operations.’*
- *‘An understanding of global trade and the importance of it to Ireland is critical.’*



Provision of Training

Respondents were asked how they train their staff and if they were satisfied with the level of training received. Figure 5.7 shows the training providers which respondents use to train staff. There is a relatively even use of supervisors/managers and local training providers who are utilised by roughly two thirds of respondents. Internal workplace instructors are used by over half of the respondents (58%). The use of the Institute of Technology or other training providers was less prevalent, representing 3 percent and 10 percent of training provision respectively. Other training providers included an US training provider and the Irish International Freight Association (IIFA).

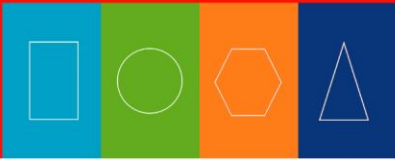
Figure 5.7: Source of Provision of Training in Companies Surveyed



Source: AECOM

Three quarters of respondents were satisfied with the level of training provided by the various internal and external trainers. Those respondents who were dissatisfied with the level of training received provided the following reasons:

- There does not seem to be a lot of courses for the industry
- It can be difficult and expensive to schedule in training
- A college with a specialisation in freight, transport and logistics is required
- Customs brokers need to be certified
- Modular job specific training suited to particular roles or functions is required
- Training providers don't give enough course choice and delivery options
- Lack of consistency and standards
- Puts strain on resources, no training for supervisory/managerial level
- Logistics industry is not served by education providers with sufficient courses of relevance
- Entry level skills should be higher.

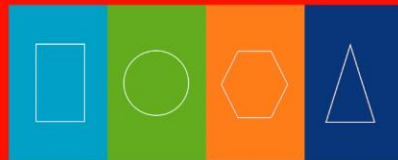


Respondents were given the opportunity to make additional comments in relation to skills in the Irish freight, logistics and transport sector.

- The (former) FÁS course run years ago was a very good introductory course for young people to start in the business.
- We should be looking to encourage schools/universities to persuade young people that logistics is a career path worth following.
- There are a high proportion of older HGV drivers who will be due to retire over the coming 5 years and most fleet insurance policies require the driver to be over 25. Coupled with the fact that most transport companies want a minimum of 2 year experience, school leavers will not be able to fill the shortage.
- Company provides security clearance training for computer parts transportation.
- There is an opportunity to develop an apprenticeship/traineeship programme through SOLAS.
- Companies need better understanding of what FTDL related training/education is available.

5.3 Conclusions

The feedback from companies surveyed demonstrated that the sector is vital to Ireland's economy. It transports a range of different consignments across a variety of modes. The employee breakdown provided by some of the respondents shows that over half of HGV Drivers are aged over 45 and 42% of Directors and Managers are aged over 45. While Director and Managerial positions can be expected to be addressed by promotion within the sector, the issue relating to HGV Drivers requires urgent attention. The outlook for the FTDL sector is generally positive, with all respondents anticipating growth of varying proportions. There were generally few issues related to recruitment (HGV drivers being an exception), in the short-to-medium term. Employees in the sector are recruited from a variety of sources, with word of mouth and referrals commonly given as a method of recruiting lower skilled and driving roles. This suggests employer's value, to some extent, recommendation of a prospective employee's potential over a particular qualification or training in such roles. The primary driver of change in demand for skills in the sector was described as regulatory and legislative changes. This can be attributed in part to the predominance of road freight organisations and the extent to which EU legislation has already transformed that sector in recent years. Respondents stated that they use either an in-house trainer or supervisor to deliver training, suggesting that in order to reduce costs training was being undertaken internally. Internal training is more likely to be delivered by larger organisations with their own training centres and qualified staff than SMEs, which often have to utilise external training providers. A significant minority of respondents stated they were dissatisfied with the quality of training they received, despite a significant amount of training being delivered in-house. This suggests that there is scope for the improvement of training courses aimed at the sector generally. Education providers were not widely used by respondents for their employee upskilling.



Chapter 6: Current Skills and Training Provision - Supply

This section provides an outline of relevant training and education provision for the Freight Transport, Distribution and Logistics sector in Ireland. This can then be assessed against the trends, opportunities and threats identified as part of the primary research, as well as the projected demand derived from the Demand Scenario Exercise (see Section 7) to determine the extent to which the current offer is meeting the demands of the industry. The completion of this supply provision was undertaken by the EGFSN Secretariat.

6.1 Third level Institution Provision

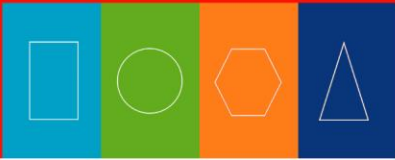
Several third level institutions offer courses aimed at producing graduates that will act as leaders and innovators in the sector. These graduates are not expected to enter the sector at lower level, but instead enter management and leadership programmes as supply chain professionals. A full list of the available courses is provided in Appendix D.

The MSc Supply Chain Management programme run by the Dublin Institute of Technology is for participants who aspire to a career in the logistics/supply chain management field in manufacturing, process, retail, transport and logistics service companies. It achieves this through broad-based vocational postgraduate education, providing the student with a knowledge of and competence in the key elements of logistics and Supply Chain Management.

An overall learning outcome is to develop graduates to contribute effectively to multi-discipline teamwork aimed at radical improvements in supply chain capability. Core modules include; Introduction to Supply Chain Management, Understanding Customer Service, Manufacturing Strategy and Operations, Physical Distribution Management, Purchasing, Information Technology in the Supply Chain, International Supply Chain Design; and Introduction to Business Strategy. Optional Modules are Managing People and Management of Information Systems. All students participate in Research Methods which will assist them in the development of their dissertation.

The four year *Bachelor of Science in Supply Chain Management* honours degree programme run by DIT aims to develop the knowledge and skills necessary for a challenging business career in management with a specialism in logistics and supply chain management. In order to achieve this objective, the course uses leading learning techniques across a range of business specialist areas within the supply chain management field. Students receive extensive exposure to real world logistics through their class work and a paid in company work placement which is undertaken in the third year of the programme. Most participants in the full time programme are international students. There is a long established part time programme which provides training to Supply Chain Management professionals in Ireland. These are usually managers or senior managers in Supply Chain Management roles in multinationals in Ireland. The part time programme is delivered in a flexible manner and participants must complete 9 modules plus a dissertation within a 3 year period.

The BSc (Transport Operations and Technology) Level 8 programme run in DIT covers road, rail, air and sea transport from both operational and technological perspectives. The aim is to develop skills



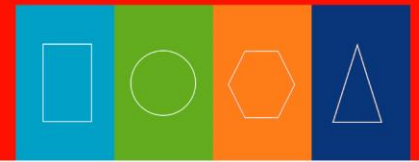
and knowledge that will be applicable at senior management levels in many transport-related businesses- road, rail, sea and air.

The Masters in Technology and Innovation Management run by DIT's College of Business is a one year full time level 9 Conversion programme which commenced in 2013-14. Students taking the programme must complete a supply chain management stream. The student intake comes from three 'technology' cohorts which are international students, standard fee paying students, and Springboard funded students. The College of Business is the education partners of the Musgrave Group as well as BWG/Spar with CPD Diploma and honours degree programmes designed and delivered with each partner organisation. To date, these programmes have graduated over 300 individuals. The Business School has recently signed a partnership agreement with the Chartered Institute of Logistics and Transport (CILT) which will involve the school providing quality assurance for CILTs part-time level 6 and 7 Logistics and Supply Chain Management programmes The College of Business also has a number of supply chain research initiatives in place.

UCD Smurfit Business School offer an *MSc in Supply Chain Management*. The course aims to explore the concepts and practices of Supply Chain Management and offers direct contact with the experience and expertise of professionals from the field. Core modules include: Supply Chain Analytics; Procurement & Supplier Management; Global Logistics; Supply Chain Operations and Supply Chain Sustainability. During the summer term, students complete a Supply Chain Consulting module. This module provides students with experience of real-life supply chain issues as experienced by organisations in Ireland and abroad. A range of supply chain management skills such as the ability to apply theory to practice, to critically analyse current practice and theory and to manage supply chain consulting projects are the expected outcomes from this module. The course is offered on a full time and part time basis. This course is also accredited by the Chartered Institute of Purchasing and Supply (CIPS), the UK professional body for purchasing and supply.

The post graduate diploma in *UCC Supply Chain Management (Lean SCM Black Belt)* is delivered by either a blended or distant learning route. This course is suitable to those who hold a NFQ level 8 degree from any discipline and also have at least 4 years relevant industry experience. It is practitioner-oriented course that provides a structured approach to the key elements of supply chain design and management in order to maximise work experience. There are seven core modules all of which are assessed by workplace assignments.

DCU Business School (DCUBS) offers a *Masters programme in Strategic Procurement*, the first of its kind in Ireland and one of only two such programmes in Europe. The aim of the programme is to build the capacity for strategic thinking in procurement and to meet the changing skills requirements for professionals either engaged in or working closely with the procurement function. The programme is suitable for both public and private sector employees. It has been endorsed by the National Public Procurement Policy Unit in the Department of Finance and the National Procurement Service in the Office of Public Works as being a suitable programme to improve the strategic procurement skills of individuals in the public sector. This programme aims to take one area of the supply chain - procurement - and focus on the role of procurement in the supply chain and, more importantly, on its strategic impact.



The Bachelor of Business (honours) in Supply Chain and Transport management run in Carlow Institute of Technology has been designed with maximum flexibility in mind so students graduate after year three with an Ordinary Degree in Business. Graduates of a relevant Higher Certificate or Ordinary Degree are eligible to progress into this course at year three or year four respectively.

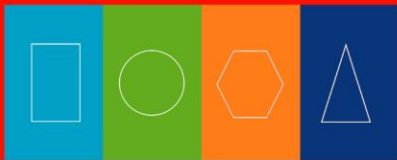
The BSc Transport Management and Technology degree run in Cork Institute of Technology is 3 years full-time for an ordinary degree with one additional year for students who progress to the BSc Transport Management (honours) degree programme. Work placement is incorporated for those who progress to the honours degree.

The Certificate in Food Supply Chain Management run in Dundalk Institute of Technology provides graduates with the opportunity to develop supply chain management skills, which have been identified as a major skills gap in the Food and Beverages sector. The programme supports graduates to critically evaluate the concepts and theories that underpin business and international management and the pivotal role played by internationalisation strategies in the creation and maintenance of a viable business.

The Bachelor of Business in Supply Chain and Transport Management run by the National Maritime College Department in Cork Institute of Technology is a one year step up degree for participants holding the Chartered Institute of Logistics and Transport (CILT) or IIPMM (Procurement and Supply Chain Management) Diploma or Graduateship in Supply Chain Management or an equivalent Level 6 qualification in a relevant discipline. It is run on a one Year, two Semesters evening/weekend basis. This course is designed for those who have some experience in the Logistics and Supply Chain Management and who wish to further their career prospects.

The National Maritime College of Ireland (NMC) delivers an operational qualification for ships officers and provides programmes necessary to qualify for roles such as ships captains, engineers and Electro Technical Officers (ETOs). NMC is the only college in Ireland that provides this service. Whilst there is an international cohort of students, the majority are Irish generally with 2nd level leaving certificates. A number of students are sent by shipping companies as associated licences are internationally recognised. NMC has approximately 750 students, but many are at sea undertaking the practical element of their studies. Engineering students have to spend 9 months on board ship, whilst those attending nautical courses have to spend 12 months at sea. Therefore approximately 400-450 students are studying at the college at any one time.

The nautical course requires three years of study, whilst engineering courses are 4 year courses excluding sea time. Students are generally 18/19 years old and usually have some history of seafaring in family or originate from seafaring communities. Once an initial licence is achieved through the college (to perform the role of a junior officer either on deck or in the engine room) professional sea service training is then undertaken after which students return as professionals to complete their studies and to qualify for an honours degree.



Irish shipping companies often provide secondment opportunity without a contract or obligation. Larger blue chip companies prefer training in their own corporate ways and as such will contact students at the start of their course and offer employment. Approximately 60-65% students are sponsored by 'blue chip' companies, whilst the remainder have arrangements with local shipping companies. The IMO Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) is a comprehensive set of international regulations intended to ensure that the highest standards of seafarer competence are maintained globally. The latest STCW standard includes a new level of officer qualification, the Electro Technical Officer. This was introduced in response to increasingly sophisticated technology on ships (e.g. networking) and the first graduates from this course will qualify in May 2015. Once qualified there is a continued requirement for professional update training. These are short training courses delivered every 5 years through the commercial arm of NMC.

Lower skilled positions on ships (sailor/rating) tend to be sourced from developing countries such as India, China and the Philippines, although Deck Officers need to have experience in order to instruct others. This has changed from 20 years ago where Irish nationals would have filled these positions.

6.2 Third level Institutions - Online/Distance Learning

In addition to traditional classroom based learning, third level institutions also offer online or 'distance' learning for those unable to attend a particular course. Table 6.1 details the online and distance based learning available at the University of Limerick and University College Cork.

Table 6.1: Third level Institutions - Online/Distance Learning

Course Title	Provider	Level/Duration	Enrolment Numbers	Graduate Numbers
Bachelor of Science in Supply Chain Management	ULearning University of Limerick	Level 8 (4 years)	2011/12: 18 2012/13: 28	2011: 6 2012: 9
Supply Chain Management (Lean SCM Green Belt)	University College Cork (UCC)	3 - 6 months 15 Credits	2011-12: 16 2012-13: 24 2013-14: 17	N/A
Masters of Science in Supply Chain Operations	ULearning University of Limerick	Level 9	Starts in September 2014	N/A

Source: EGFSN Secretariat

6.3 Private Sector & Professional Body courses

Ireland has a number of Professional Bodies and Private Sector organisations that provide training, diplomas, certification and short-degrees in fields associated with the sub sector. They include:

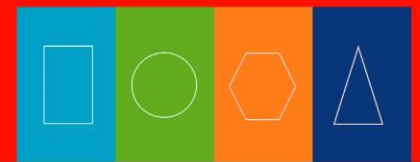


Table 6.2: Private Sector & Professional Body courses

Course Title	Provider
Diploma in Logistics and Supply Chain Management, Diploma in Procurement and supply Chain Management, Diploma / Certificate in Warehouse operations and Certificate in Transport Distribution	Communication and Management Institute, Dublin
Diploma in Logistics and Supply Chain Management	Chartered Institute of Logistics and Transport (CILT)
Certificate in Logistics	
Certificate of Professional Competence in Road Transport Operations Management	
Higher Certificate in Business, Procurement, Bachelor of Business in Procurement and Supply Management, Bachelor of Business in Procurement, Supply Management, Certificate in Warehousing and Supply and Bachelor of Business, Procurement and Supply Chain Management	Irish Institute of Purchasing & Materials Management (IIPMM)
Good Distribution Practice (GDP)	Life Science Ireland - a division of the Irish Exporters Association (IEA)
Irish Freight Forwarding Association	FIATA Diploma in Freight Forwarding
SAFED training - safe and fuel efficient driving	Freight Transport Association
Certificate in Production and Inventory Management	Irish Supply Chain Management Institute
Logistics for International Trade, Export and Import Documentation and Dangerous Goods Safety Advisor examination training	Institute of International Trade of Ireland (an Irish Exporters Association Body)
Warehouse Operations Management Diploma (online course), Ports & Shipping Management Diploma (online course) and Procurement & Supply Diploma (online course)	Chartered Institute of Purchasing and Supply
Irish Training and Education Centre	International Trade and Customs (distance learning) ITEC Diploma
Diageo	Supply chain capability development programme - CPD example
Drivers Hours & Working Time Directive Workshop for Managers/Supervisors and Drivers Hours & Working Time Directive Workshop for Drivers	Freight Transport Association
Certified Forklift Training	Warehouse Training Solutions, Dublin

Source: EGFSN Secretariat

6.4 Skillnets Provision

Skillnets programme provision in this area is aimed at the long-term unemployed (generally those who have been out of work for over a year) and companies looking to upskill their employees. Available courses include Forklift Operations in Letterkenny and Warehouse and Inventory Management. HGV Driver courses have also been provided although feedback received was that those completing the course were not always well received by the industry, with a preference for younger drivers with a greater desire to work in the industry.

6.5 SOLAS funded Education & Training Boards Provision

SOLAS has been established to develop and give strategic direction to the Further Education and Training Sector in Ireland. It is responsible for funding, planning and co-ordinating a wide range of training and further education programmes and has a mandate to ensure the provision of high-quality programmes to jobseekers and other learners. Several Education and Training Boards (ETBs) help deliver Driver CPC (Certificate of Professional Competence) courses. Driver CPC was introduced across the EU in 2009 for professional truck drivers. Existing drivers at the time CPC came into force automatically obtained a Driver CPC without having to take more tests. This is called acquired rights. In order to keep their Driver CPC, the person had to undertake 35 hours of periodic training (seven hours per year) over the following five years. For new drivers at the time CPC came into force a person had to take a Driver CPC examination. The examination includes:

- Two hour multiple choice theory test and a Two hour case study theory test
- 90 minute driving test and a 30 minute practical test.

In addition to Driver CPC accredited courses several ETBs also deliver courses for Forklift Truck operators, courses related to warehousing and wider freight and logistics courses. These can be completed in the evenings or represent full time, 48 week undertaking. Table 6.3 demonstrates that there is a scheduled 2014 course capacity of 1,404. Further detail is provided in Appendix D.

Table 6.3: SOLAS funded Courses 2014

Places on offer as of 2014 September 2014 in former FAS Training Centres- now in ETBs:

<i>Transport, Distribution & Logistics - Scheduled Courses throughout 2014</i>	<i>Scheduled capacity 2014</i>
CPC - Control of Vehicle & Eco-Driving Techniques	48
CPC - Health and Safety for the Professional Driver	64
CPC - Minimising Risks & Managing Emergencies	32
CPC - Professional Bus Driver	48
CPC - Professional Truck Driver	64
CPC - Role of the Professional Driver	48
Delivery Driver	52
Forklift Counter Balance (evenings)	80
Forklift Truck Operator (Novice) Short Course	141
Forklift Truck Operator (Novice) Evening	45
Heavy Goods Vehicle Driving (HGV) - Artic	168
Heavy Goods Vehicle Driving (HGV) - Rigid	422
Introduction to Stores Management - Evenings	32
Logistics and Distribution	60
LOGISTICS AND DISTRIBUTION (FIT)	80
SUPPLY CHAIN LOGISTICS	20
Total	1,404

Source: SOLAS

6.6 Other SOLAS funded Provision

There are a number of relevant SOLAS funded programmes as follows.

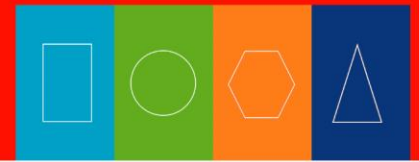


Table 6.4: Other Education & Training Board Provision

Course title	Provider	NFQ Level / duration	No.s of participants
Warehouse data base management	Fasttrack to IT (FIT) Initiative- Pearse College of Further Education	QQI level 5	N/A
Business Procurement & Supply Chain Mgt	Colaiste Ide - College of Further Education, Dublin	QQI Level 6 Certificate night course	N/A
Warehousing Skills	Cork Education & Training Board		N/A

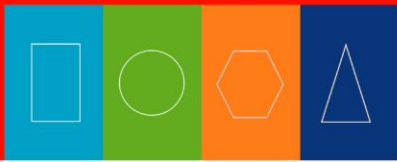
Source: EGFSN Secretariat

A total of 282 places in Warehousing and logistics have also been approved under the SOLAS funded Momentum programme for the long term unemployed in September 2014. The Momentum programme provides free education and training for long -term unemployed job-seekers. It includes on-the-job training as well as accreditation for education and training. One third of all places are ring fenced for those under 25 years

6.7 Conclusions

This section has outlined a range of courses available to upskill and train employees in the sector at all levels. Feedback on the quality of these courses has been mixed, and awareness of course provision is sometimes limited. Predicting the supply of employees coming into the sector based on course participants is more challenging when compared against sectors with specific qualification requirements (e.g. IT Professionals). For example, whilst having attended a short course may be an advantage when applying for a job as a warehouse operative, it is not essential. An associated licence to become a HGV driver can be secured in a number of ways (e.g. company trained or via a specific course). In Ireland, training to prepare for the RSA Driver Certificate of Professional Competence can be taken at around 320 RSA approved training providers.⁴¹ This may be for either rigid or articulated heavy good vehicles (HGV). Similarly, those entering the sector at managerial level may not have a degree in a specific logistics and distribution field. Feedback has shown that graduates from business courses are sought after by larger companies in the sector but often have little knowledge of the supply chain. Such is the perception of sector that many logistics graduates may not take up roles in the sector, further complicating the assessment of the extent to which supply meets demand. The challenge therefore is to ensure that courses offered meet the requirements of industry (e.g. customs, refrigeration technicians, supply chain knowledge at the strategic level) and that these courses can be mapped to any prospective career pathway. This requires greater levels of communication between industry and training and education providers and a more co-ordinated approach from all stakeholders in the sector.

⁴¹ <http://www.rsa.ie/en/RSA/Professional-Drivers/Driver-Hours/Find-a-CPC-Trainer/>.



Chapter 7: Demand Scenario Analysis

7.1 Introduction

The purpose of this element of the Study is to determine the level of skills demand within the FTDL sector in the years to 2020, and the potential number of job vacancy opportunities arising. This section sets out the methodology for forecasting skills demand and the estimation of any potential supply gaps. Two skills demand scenarios are estimated based on a more and less optimistic economic outlook. The economic scenarios used in the forecast are those forecast by the ESRI⁴² in 2013. The approach taken was to forecast 'shortfalls' in occupations that form the core of employment in FTDL. Employment in these occupations is spread across a wide variety of sectors, including transport, retail and wholesale trade, construction and more. Nevertheless, the skills are transferrable and workers in any occupation can move freely between employers in other sectors. Heavy Goods Vehicle drivers, for example, can move between employment in retail, manufacturing, transport and more. Thus, a shortage of drivers would affect all of the sectors that employ drivers. However, the effect of shortages in these occupations, which comprise the core of FTDL employment, would naturally be larger in FTDL than in other sectors. The demand scenarios do not estimate demand for non-core occupations in the FTDL sector, such as IT, legal or HR professionals. Although these occupations are important to the sector, the sector does form a significant proportion of the demand for professionals in these fields.

7.2 Demand Scenario Methodology

This section sets out the methodology used to forecast demand for labour and the possible shortfall by 2020. The approach taken was to assess the demand in core FTDL *occupations* rather than the FTDL sector overall. The advantage of this approach is that those who work in freight occupations but not in the FTDL sector are included in the analysis. For example, HGV drivers who are employed by manufacturers or in the retail sector are included. Implicit in this approach is the assumption that FTDL skills for any given occupation can be transferred between different sectors. Thus there is a single pool of labour from which employees and skills may be drawn. In practice, there can be limits to the extent to which workers move between sectors.

However, the approach was deemed appropriate in light of the fact that 42% of those employed in the relevant occupations in the baseline data were HGV drivers. Some occupations, which do not form the core of FTDL but are relevant to the sector such as IT, legal and HR, were excluded from the demand scenario. FTDL does not form a significant proportion of the total demand for labour in these professions.

The relevance of such professions to FTDL and assessment of the likely difficulties in recruiting sufficient staff were addressed in the Primary Research elements of the Study.

⁴² Medium Term Review: 2013-2020 10/07/2013 By John FitzGerald and Ide Kearney (eds.), Adele Bergin, Thomas Conefrey (Central Bank of Ireland), David Duffy, John FitzGerald, Ide Kearney, Kevin Timoney, Nuša Žnuderl. ISBN 97807070035 ISSN0790-9470.



Fourteen occupations were deemed to be relevant to the demand scenarios, hereafter referred to as 'FTDL-14'. The occupations were drawn from the SOC 2010 occupation classifications, which align with the 2011 Census categories. The relevant occupations are as follows:

- HGV drivers
- Mobile machine drivers and operatives
- Managers and directors in storage and warehousing
- Managers and directors in transport and distribution
- Fork-lift truck drivers
- Transport and distribution clerks and assistants
- Aircraft pilots and flight engineers
- Other drivers and transport operatives
- Air transport operatives
- Rail transport operatives
- Train and tram drivers
- Ship and hovercraft officers
- Marine and waterways transport operatives
- Importers and exporters

Table 7.1 demonstrates the key skills, knowledge, behaviours and competencies required for each of the roles described

Table 7.1: Description of Core FTDL Roles, Skills, Knowledge, and Competencies Required

Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
LGV Drivers (previously HGV)	<ul style="list-style-type: none"> ▪ Basic skills to checks tyres, brakes, lights, oil, water and fuel levels and general condition of the vehicle ▪ Understands delivery schedule and route planning ▪ Assists with loading/unloading and ensures that load is evenly distributed and safely secured ▪ Competent to drive vehicle safely to destination, in accordance with schedule ▪ Maintains records of journey times, mileage and hours worked in accordance with legislative requirements ▪ Undertakes minor repairs and notifies supervisor of any mechanical faults ▪ Ability to work effectively on their own 	<ul style="list-style-type: none"> ▪ Cat C, C+E (vehicles over 7.5T) ▪ Cat C1, C1+E (vehicles between 3.5-7.5T) ▪ Transport compliance (Drivers' Hours, Tachograph rules, Vehicle safety) ▪ Safe and fuel efficient driving (SAFED) ▪ Hazard awareness ▪ Knowledge of vehicle and other transport related technology ▪ Initial Driver CPC (new drivers) ▪ Periodic Driver CPC (existing drivers) ▪ ADR (Dangerous goods transport) ▪ Good Distribution Practices (GDP) Passport (handling pharmaceuticals). 	<ul style="list-style-type: none"> ▪ Customer Service ▪ Integrity ▪ Initiative ▪ Self-disciplined ▪ Effective communication ▪ Follows rules and regulations ▪ Safety and hazard awareness

Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
Mobile machine drivers and operatives	<ul style="list-style-type: none"> ▪ Ability to attach extensions onto machine ▪ Capable of loading machine with required materials ▪ Controls levers, pedals and switches to carry out all required functions of the vehicle ▪ Good awareness of obstacles or obstructions and able to take immediate action ▪ Carrying out minor repairs and general maintenance duties 	<ul style="list-style-type: none"> ▪ Basic Education ▪ Cat B car licence ▪ 360 excavator machine ticket ▪ Teleporter driver certification ▪ Valid safe CSCS or CPCS plant operation cards 	<ul style="list-style-type: none"> ▪ Initiative ▪ Self Disciplined ▪ Decision making ▪ Follows rules and regulation ▪ Safety and hazard awareness
Managers and Directors (Storage and Warehousing)	<ul style="list-style-type: none"> ▪ Ability to plan, organise, direct and co-ordinate the activities and resources necessary for the safe and efficient receipt, storage and warehousing of goods and for the maintenance of stocks at an optimal level ▪ Works effectively with other departments to determine the materials and other items required for current and future production schedules and sales commitments ▪ Ability to review, develop and implement stock control, handling and distribution policies to maximise use of space, money, labour and other resources ▪ Competent to develop and manage budgets and preparing reports on expenditure ▪ Decides on storage conditions for particular items, allocates warehouse space and arranges for regular stock inspections. 	<ul style="list-style-type: none"> ▪ Professional and vocational qualifications relevant to role: ▪ CIPS Warehouse Operation Management Diploma ▪ Certificate in warehousing supply (IIPMM) ▪ Relevant Degree or Masters level courses ▪ Good IT skills ▪ People management ▪ Employment law ▪ GDP passport (if required) 	<ul style="list-style-type: none"> ▪ Leadership ▪ Strategic Planning ▪ Problem solving ▪ Drive for results ▪ Quality focus ▪ Planning ▪ Organising ▪ Communicates with clarity ▪ Managing Conflict ▪ Decision making ▪ Commitment to safety ▪ Teamworking ▪ Flexible and adaptable ▪ Organisational understanding

Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
Managers and Directors (Transport and Distribution)	<ul style="list-style-type: none"> ▪ Effective at organising, directing and co-ordinating the activities and resources necessary for the safe, efficient and economic movement of passengers and freight by road, rail, sea and air transport ▪ Plans the optimum utilisation of staff and operating equipment, and co-ordinates maintenance activities to ensure least possible disruption to services ▪ Competent at examining traffic reports, load patterns, traffic receipts and other data, taking appropriate action where necessary ▪ Managing the movement, handling and storage of freight in transit, and reviewing space utilisation, staffing and distribution expenditure to determine future distribution policies ▪ Ensures that all team members comply with statutory regulations ▪ Supervises day-to-day activities in the transport operation ▪ Good customer relationship skills with the ability to resolve any complaints and problems quickly and effectively. 	<ul style="list-style-type: none"> ▪ Current transport compliance knowledge ▪ Certificate of Professional Competence (CPC) ▪ CILT Diploma/Certificate in Logistics and Supply Chain Management ▪ Good IT skills ▪ Relevant Degree or Masters level courses ▪ People management ▪ Employment law 	<ul style="list-style-type: none"> ▪ Leadership ▪ Strategic Planning ▪ Problem solving ▪ Drive for results ▪ Quality focus ▪ Planning ▪ Organising ▪ Communicates with clarity ▪ Managing Conflict ▪ Decision making ▪ Commitment to safety ▪ Teamworking ▪ Flexible and adaptable ▪ Understanding organisations

Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
Fork-lift truck drivers	<ul style="list-style-type: none"> ▪ Loading and unloading goods from deliveries made by various means e.g. truck, ship and aeroplane. ▪ Ability to manipulate vehicle in confined spaces and to store goods in often difficult to reach areas of warehouses, depots etc. ▪ Competent in checking the fork-lift trucks are in good working order and making sure any loads are safe and secure. ▪ Transporting goods to and from other workers on the production line e.g. packers. ▪ Tidying and stacking empty pallets ▪ Performing other related tasks which could involve using specialist equipment such as pump trucks, telescopic handlers and counter-balance trucks 	<ul style="list-style-type: none"> ▪ Counterbalance Licence ▪ Reach Truck Licence ▪ Safety and Hazard awareness ▪ Other specific vehicle or attachment training 	<ul style="list-style-type: none"> ▪ Hazard and Safety awareness ▪ Follows rules and regulations ▪ Initiative ▪ Teamworking ▪ Communication
Transport and distribution clerks and assistants	<ul style="list-style-type: none"> ▪ Ability to process customer orders and take appropriate action to maintain efficiency in the supply chain ▪ Liaise with all personnel in the supply chain to maintain ▪ Formulates delivery loads, vehicle schedules and routes to be followed by delivery staff ▪ Monitors and manages tachograph analysis, records of hours worked and distance travelled by drivers ▪ Obtains customs clearance and processes import and export documentation necessary for the movement of goods between countries ▪ Maintains records regarding the movement and location of freight, containers and staff. 	<ul style="list-style-type: none"> ▪ Good standard of education with maths and English ▪ Transport Compliance Knowledge ▪ Vocational courses relevant to role and specific modal activities ▪ Customs and Excise knowledge ▪ Good IT skills 	<ul style="list-style-type: none"> ▪ Customer service ▪ Initiative ▪ Analytical skills ▪ Problem solving ▪ Planning and organising ▪ Communication ▪ Teamworking ▪ Attention to detail

Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
Storage and Warehouse Operator	<ul style="list-style-type: none"> ▪ Maintains work environment and all equipment in a clean and orderly state to ensure safety, security and hygiene standards ▪ Competent at processing orders and troubleshooting problems in a logistics operation ▪ Ability to receive goods and efficiently place them in storage to maximise available space, improve distribution and reduce safety or environmental risks ▪ Competent at picking goods in accordance with regulations (e.g. Food, Hazardous and Pharmaceuticals products) for dispatch or to assemble orders ▪ Proficient in using all required manual handling equipment required to carry out tasks safely and efficiently (e.g. Fork Lift trucks, pallet trucks, hoists etc.) ▪ Maintain stock levels and records, taking appropriate action to replenish, or other stock control activities, as required ▪ Ability to deal with customer complaints, process returned goods and to comply with any disposal requirements 	<ul style="list-style-type: none"> ▪ Good basic standard of education ▪ Good numeracy skills ▪ Specific regulatory requirements for handling certain products (e.g. Pharmaceuticals and GDP passport) 	<ul style="list-style-type: none"> ▪ Follows rules and regulations ▪ Safety awareness ▪ Teamworking ▪ Effective communication ▪ Customer service

Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
Other Drivers and transport operatives	<ul style="list-style-type: none"> ▪ Plans vehicle routeing and scheduling and makes recommendations for improvement of services ▪ Organises crews as necessary, ensures compliance with regulations regarding the carrying of passengers and luggage, ▪ Reports and takes action on any irregularities ▪ Ensures goods have been correctly loaded into vehicle, monitors and records information from tachograph, and arranges for servicing, refuelling, cleaning and repair of depot vehicles ▪ Operates and maintains lighthouses and navigational lights in harbours, and assists in mooring craft ▪ Operates and maintains locks, opens and closes moving bridges across inland waterways and docks 	<ul style="list-style-type: none"> ▪ Transport Compliance Knowledge ▪ Knowledge of routeing and scheduling systems ▪ Vocational courses relevant to role ▪ Good IT skills ▪ GDP passport (if required) 	<ul style="list-style-type: none"> ▪ Customer Service ▪ Integrity ▪ Initiative ▪ Self-disciplined ▪ Effective communication ▪ Follows rules and regulations ▪ Safety and hazard awareness
Aircraft Pilots and Flight Engineers	<ul style="list-style-type: none"> ▪ Obtain information relating to the route/weather information and a flight plan ▪ Responsible for briefing the crew on the flight plan and on safety information regarding the route ▪ Competent in carrying out a pre-flight safety inspection and that all safety systems are working properly ▪ Ensuring the fuel levels balance safety with economy and supervising the loading and fuelling of the aircraft ▪ Communicating with air traffic control before take-off and during flight and landing ▪ Understanding and interpreting data from instruments ▪ Make regular checks on the aircraft's technical performance and position, weather conditions and air traffic during flight ▪ Reacting quickly and appropriately to environmental changes and emergencies 	<ul style="list-style-type: none"> ▪ Commercial Pilots licence ▪ Degree level qualification- Science preferred ▪ Sufficient flight time to meet airline requirements 	<ul style="list-style-type: none"> ▪ Leadership ▪ Quality focus ▪ Planning ▪ Organising ▪ Communicates with clarity ▪ Decision making ▪ Commitment to safety ▪ Integrity ▪ Confidence ▪ Problem solving

Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
Air transport operatives	<ul style="list-style-type: none"> ▪ Involved in the refuelling, loading and unloading of aircraft ▪ Directs movement of aircraft at airports, and positions gangways or staircases to allow passengers to board and disembark ▪ Loads and unloads conveyor belts to transport luggage between terminal buildings and aircraft, monitors conveyor belts and clears any blockages ▪ Loads aircraft with freight, luggage, in-flight meals, refreshments and other items ▪ Operates retractable gangway or positions mobile staircases to enable passengers and crew to board and disembark aircraft. 	<ul style="list-style-type: none"> ▪ Good basic standard of education ▪ Vocational courses as required and recommended by IATA, TIACA, FIATA and ICAO ▪ Specific safety training e.g airside ramp operations 	<ul style="list-style-type: none"> ▪ Customer Service ▪ Integrity ▪ Teamworking ▪ Decision making ▪ Effective communication ▪ Follows rules and regulations ▪ Safety and hazard awareness

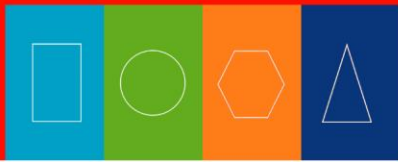
Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
Rail transport operatives	<ul style="list-style-type: none"> ▪ Assist drivers in the operation of passenger and goods trains ▪ Occasionally drive locomotive engines in marshalling yards and sidings to prepare trains ▪ Responsible for operating signals and points to control the movement of rail traffic ▪ Ability to plan and organise crews as necessary ▪ keeps crews informed of any line repairs or restrictions, and checks train running times for punctuality ▪ Competent to examines schedules and make safe decisions on the 	<ul style="list-style-type: none"> ▪ Good basic standard of education ▪ Valid Personal Track Safety (PTS) card 	<ul style="list-style-type: none"> ▪ Customer Service ▪ Planning and organising ▪ Teamworking ▪ Decision making ▪ Integrity ▪ Initiative ▪ Self disciplined ▪ Effective communication

	<p>movement of trains</p> <ul style="list-style-type: none"> ▪ Issues instructions to drivers, signal operatives and level crossing keepers to ensure safe and efficient rail operation ▪ Operates signals and opens and closes barriers at level crossings ▪ Examines shunting instructions, uncouples wagons and coaches, guides movement of carriages, links-up carriages, ensures security of couplings and reconnects brake and heating systems ▪ Assists drivers in the operation of locomotives ▪ Checks loading and informs driver of load distribution 		<ul style="list-style-type: none"> ▪ Follows rules and regulations
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Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
Train and tram drivers	<ul style="list-style-type: none"> ▪ Checks controls, gauges, brakes and lights before start of journey and studies route, timetable and track information ▪ Checks safety equipment, regulates the heating and records engine defects or unusual incidents on the journey ▪ Starts train or tram when directed and operates controls to regulate speed ▪ Watches for track hazards, observes signals and temperature, pressure and other gauges ▪ Stops as directed to allow passengers to embark/ disembark ▪ Makes scheduled stops for the loading and unloading of freight and coupling/uncoupling of carriages and tubs ▪ Maintains radio contact with control centre 	<ul style="list-style-type: none"> ▪ Good basic standard of education ▪ Recognised in-company training programme 	<ul style="list-style-type: none"> ▪ Customer Service ▪ Integrity ▪ Initiative ▪ Self disciplined ▪ Decision making ▪ Effective communication ▪ Follows rules and regulations ▪ Safety and hazard awareness

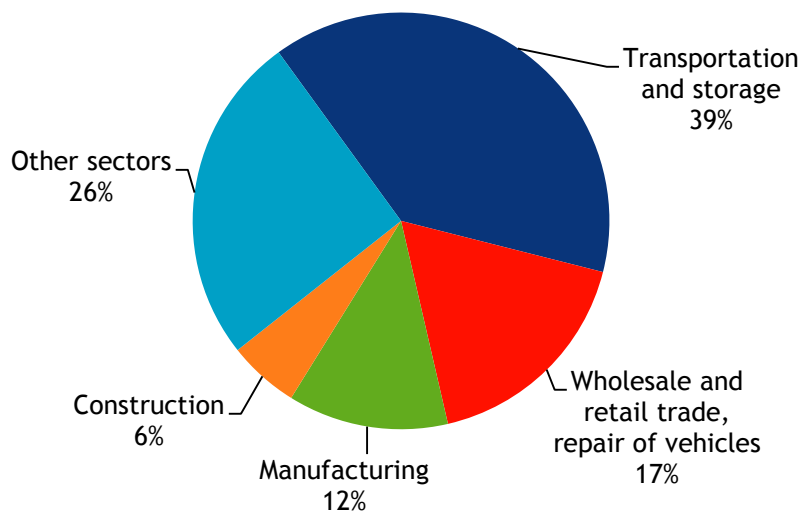
Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
Ship and hovercraft officers	<ul style="list-style-type: none"> ▪ Responsible for navigating the ship using state-of-the-art radar and GPS systems, monitoring weather reports and other related broadcasts ▪ Proficient in using on-board communication systems to liaise with other crew members ▪ Responsible for operational responsibilities of the crew, such as the loading of cargo and the use of machinery ▪ Responsible for making sure everyone complies with rigorous health and safety policies. ▪ Range of administrative and managerial duties, such as maintaining the log, training junior staff and monitoring budgets 	<ul style="list-style-type: none"> ▪ Recognised professional and vocational courses (e.g. NMCI certificate, diploma and degree level courses) 	<ul style="list-style-type: none"> ▪ Leadership ▪ Organising ▪ Problem solving ▪ Decision making ▪ Customer Service ▪ Initiative ▪ Self disciplined ▪ Effective communication ▪ Decision making ▪ Follows rules and regulations ▪ Safety and hazard awareness

Role	Skills/Accountabilities	Knowledge /Qualifications	Behaviours/Competencies
Marine and waterways transport operatives	<ul style="list-style-type: none"> Ensures that necessary fuel supplies are on board and inspects engine, boilers and other mechanisms as required Effective diagnostics skills to identify issues with worn parts of plant and machinery Involved in stowing cargo and prepares ship for leaving port, continually monitoring hazards and taking appropriate action Steers ship, under the supervision of a duty officer continually checking navigational aids Performs other deck duties as required to maintain a safe and efficient work environment General maintenance tasks associated with greasing winches and derricks, opening up and battening down hatches, securing gangways and ladders and lowering and raising lifeboats 	<ul style="list-style-type: none"> Good basic education Specific vocational training relating to safety and security e.g. lifting equipment, hazardous goods, security measures 	<ul style="list-style-type: none"> Customer Service Initiative Self disciplined Effective communication Decision making Follows rules and regulations Safety and hazard awareness
Importers and exporters	<ul style="list-style-type: none"> Investigates and evaluates home and overseas demand for particular commodities Obtains orders from buyers and arranges payment by bill of exchange, letter of credit or other means Arranges for shipment of commodities overseas and ensures that insurance and export licences are in order Carries out customs clearance procedures for imports, arranges their storage and delivery and sells them personally or through a commodity broker Advises home and overseas producers on the likely future demand for their goods 	<ul style="list-style-type: none"> Relevant qualification in International Trade Other language skills Good numeracy skills Data management and IT skills Regulatory requirements relating to importing and exporting 	<ul style="list-style-type: none"> Customer Service Planning and organising Analytical skills Decision making Initiative Self disciplined Effective communication Good networker and negotiator



As described above, the occupations include employees in freight, passenger transport and in other sectors. Figure 7.1 shows the industrial composition of the FTDL-14 occupations as reported in the 2011 Census. Although many are employed in transportation and storage, others are employed in retail and wholesale trade, manufacturing and construction. As described, this approach facilitates the analysis of the market for labour that is core to FTDL.

Figure 7.1: Industrial Composition of the FTDL-14 Occupations

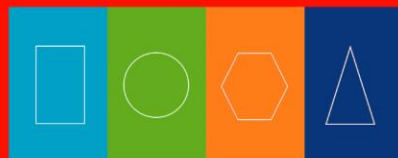


Source: CSO Census 2011

The process of estimating the shortfall in labour supply for the FTDL-14 occupations is briefly outlined below:

- A cohort component analysis was used to project the number of current employees that would remain in the workforce by 2020 assuming a retirement age of 65.
- The resulting estimate is the number of employees remaining in each occupation in 2020, assuming there are no new entrants to replace retirees.
- Two scenarios representing the change in demand for road, sea and air transport were forecast to 2020.
- These forecasts were based on the historical relationships between demand for road, sea and air transport and the wider economy (GDP).
- The GDP forecasts used were provided in the ESRI Medium Term Review, published in 2013.
- The two projections of future demand were then applied to the 2011 employment data, giving rise to two labour demand forecasts for 2020.
- The share of total demand assigned to each occupation in 2020 was then given by:
 - a) The expected growth rates in various modes of transport
 - b) The outputs from the primary research, which elicited information on the expected mix of occupations in 2020.

Gaps in the supply of labour for each occupation (for both demand scenarios) were then identified.



7.3 Baseline Data (2011)

The first step in estimating the demand for labour in 2020 was to establish a set of base data from which forecasts could be made. The number of persons employed in a subset of 14 occupations of the SOC 2010 occupation classifications provides the baseline data. These occupations (FTDL-14) comprise the occupations that are core to the FTDL sectors. The most recent and comprehensive data on persons employed available are the 2011 Census. These data were supplied by the CSO. Table 7.2 sets out the baseline data of the number of persons at work in each of the 14 relevant occupations as per the 2011 Census.

Table 7.2: Persons at Work by core FTDL Occupations (as per Census 2011)

FTDL Role	No.
HGV drivers	19,758
Mobile machine drivers and operatives n.e.c.	5,426
Managers and directors in storage and warehousing	4,071
Managers and directors in transport and distribution	3,497
Fork-lift truck drivers	3,074
Transport and distribution clerks and assistants	2,767
Aircraft pilots and flight engineers	1,622
Other drivers and transport operatives n.e.c.	1,278
Air transport operatives	1,135
Rail transport operatives	999
Train and tram drivers	670
Ship and hovercraft officers	623
Marine and waterways transport operatives	543
Importers and exporters	332
FTDL-14	45,795

Source: 2011 Census - SOC 2010 occupation definitions

7.4 Cohort Component Projections

Table 7.3 includes the proportion of employees in each category that were 55 years of age or older. Occupations with a high proportion of employees of age 55 years or older will have a large number of retirees in the coming years and thus will require a relatively large number of new entrants to the occupation. HGV drivers comprise the largest group amongst the 14 occupations and 19% of these were aged 55 years or older as at 2011.

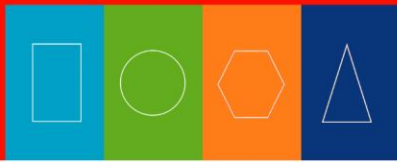


Table 7.3: Persons at Work by FTDL Occupation- 55 years+ (2011 Census)

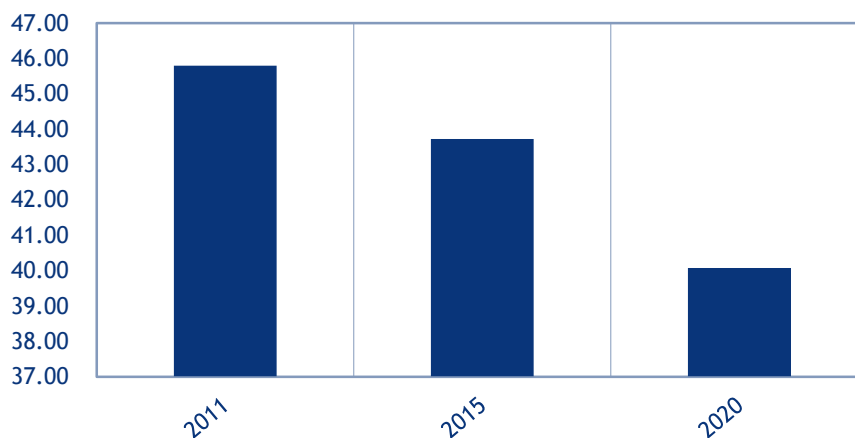
Role	Number of Persons at Work	% 55 Years and older
HGV drivers	19,758	19%
Mobile machine drivers and operatives	5,426	17%
Managers and directors in storage and warehousing	4,071	10%
Managers and directors in transport and distribution	3,497	16%
Fork-lift truck drivers	3,074	11%
Transport and distribution clerks and assistants	2,767	9%
Aircraft pilots and flight engineers	1,622	9%
Other drivers and transport operatives n.e.c*	1,278	23%
Air transport operatives	1,135	8%
Rail transport operatives	999	15%
Train and tram drivers	670	8%
Ship and hovercraft officers	623	21%
Marine and waterways transport operatives	543	20%
Importers and exporters	332	23%
FTDL-14	45,795	16%

Source: 2011 Census - SOC 2010 occupation definitions

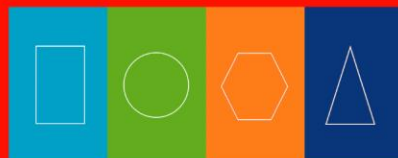
*not elsewhere classified

With the baseline data established, each age cohort was then projected forward to 2020 and the total number remaining in work in the FTDL-14 in 2020 was calculated. In order to project the number of persons at work in the 2020, a standard retirement age of 65 was assumed. However, a small percentage (1.8%) of the persons employed in these occupations was aged 65 or older in 2011. An adjustment was made to reflect the fact that there would be persons of age 65 and older at work in the forecast period. Figure 7.2 depicts the 2011 data and the 2015 and 2020 projections, assuming that there are no new entrants.

Figure 7.2: Persons at Work Core FTDL occupations (Assuming No New Entrants 2011, 2015, 2020)



Source: AECOM



The baseline data and the projected persons at work in 2020 are presented by occupation in Table 7.4 below. An overall decline of 5,720 persons is expected by 2020, this is predominantly comprised of retirements by HGV, mobile machine and other drivers. On the other hand, relatively few aviation workers will retire, with ‘aircraft pilots and flight engineers’ forecast to decline by only 7% and ‘air transport operatives’ forecast to decline 6%.

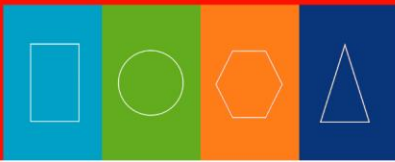
Table 7.4: Baseline employment and retirement-based decline to 2020

	2011 Persons Employed (thousands)	% Decline by 2020	2020 Persons Employed (thousands)
Large goods vehicle drivers	19.8	15%	16.8
Mobile machine drivers and operatives n.e.c.	5.4	14%	4.7
Managers and directors in storage and warehousing	4.1	8%	3.8
Managers and directors in transport and distribution	3.5	12%	3.1
Fork-lift truck drivers	3.1	9%	2.8
Transport and distribution clerks and assistants	2.8	7%	2.6
Aircraft pilots and flight engineers	1.6	7%	1.5
Other drivers and transport operatives n.e.c.	1.3	18%	1.0
Air transport operatives	1.1	6%	1.1
Rail transport operatives	1.0	12%	0.9
Train and tram drivers	0.7	7%	0.6
Ship and hovercraft officers	0.6	17%	0.5
Marine and waterways transport operatives	0.5	15%	0.5
Importers and exporters	0.3	17%	0.3
FTDL-14	45.8	12%	40.1

Source: AECOM

As the forecast does not include the impact of non-retirement exits from the workforce, the forecast of supply is likely to overestimate the number of persons remaining at work in these occupations in 2020. Supply will be further reduced by workers moving to occupations outside the FTDL-14, by workers effectively retiring to home duties and by workers returning to education. At the same time, there are also entries into the FTDL-14 from unemployment, home duties etc. Only the *net* outflow is of relevance in the context of measuring a possible shortfall in the labour force. In light of these observations, the approach taken was to include a sensitivity analysis which would assess the possible additional impact on supply of a net outflow of 1% per annum. The analysis of the ‘shortfall’ is presented in Box 7.1.

It is also possible that the number of people working at age 65 and older has been underestimated if the trend of continuing to work past the age of 65 accelerates. A dramatic change in the forecast period is not expected but some change in this regard is likely. Workers may extend their careers due to concerns regarding financial security, particularly in the light of the economic developments of recent years. Furthermore, improved morbidity in the later years of life will facilitate longer careers.



7.5 Demand Forecast

A forecast of the labour demand for the FTDL-14 occupations is required in order to forecast the possible shortfall in supply. This section describes the process of estimating the quantity of labour that would be required in 2020.

The demand for labour in each of the FTDL-14 occupations is driven by transport demand.⁴³ Therefore, a forecast of transport demand was first estimated and this was then applied to the baseline employment data to forecast labour demand.

The steps in generating the forecast are as follows:

- Identify historical data series that represent the demand for transport
- Identify a suitable historical data series that represents economic progress
- Estimate the historical relationships between the growth in transport demand and the growth in the output of the wider economy
- Identify a pair of economic forecasts on which to base the FTDL-14 forecasts
- Having identified the relationships, derive labour demand forecasts from the economic forecasts.

These steps are described in more detail below.

Identifying Suitable Measures of Transport Demand

A number of time series datasets that would estimate the historical demand for transport are available. The most appropriate of these are: the number of vehicles in the goods vehicle (GV) fleet, the total tonnes handled⁴⁴ at Irish ports and total air passengers at Irish airports. These data are readily available and provide a detailed picture of transport demand in Ireland. In the main, the demand for the FTDL-14 occupations is represented by the number of goods vehicles, as all goods being transported in Ireland must use this mode at some point.

Thus, the size of the GV fleet is deemed to be a suitable proxy for the general demand for the FTDL-14. However, the port data gives rise to the forecast of port labour demand and air passengers to the aviation labour demand. Figure 7.3 below shows the growth in the GV Fleet, tonnes handled at Irish ports and air passengers at Irish airports since 1983. All three series are highly correlated with GDP.

⁴³ 'Transport' in this case refers both to growth in the transport sector and to transport as a component of other sectors.

⁴⁴ Roll-on/roll-off traffic, Lift-on/lift-off traffic Liquid bulk, Dry bulk, Break bulk and all other goods are all included in this measure of tonnes handled.

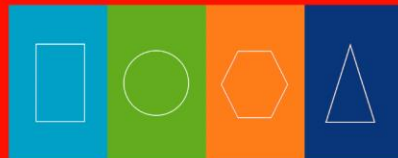
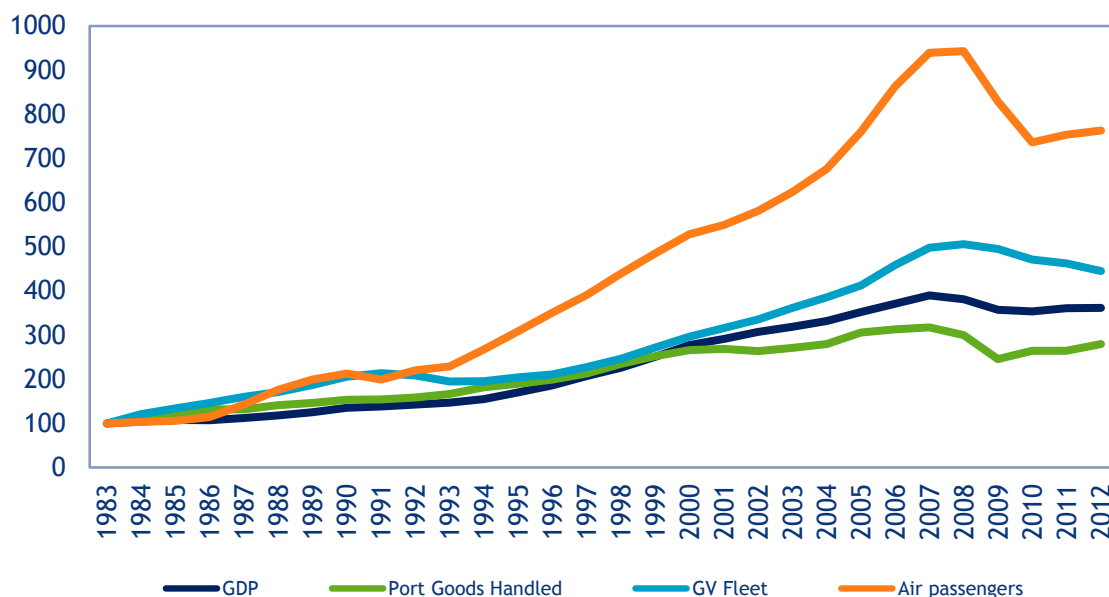


Figure 7.3: GDP and Transport Indices



Source: AECOM

Identifying a Suitable Measure of Economic Growth

In general terms, there is a strong correlation between transport and GDP. As shown in Figure 7.3 above, changes in the fleet have been very much in line with changes in GDP since 1983.

It is often held that the growth of the services sector will mean that changes in GDP will have less of an impact on goods transport demand than heretofore. Econometric testing demonstrated that economic aggregates that exclude service sector activities do not provide better modelling outcomes. Some possible explanations for the absence of a decline in the goods transport intensity of GDP include:

- Manufacturing sector continues to have a strong presence in the Irish economy;
- Much of manufacturing activity derives from multinational companies with a high import and export activity, which is transport intensive; and
- Some service sub-sectors are relatively freight intensive.

Other economic aggregates might include the additional impact of imports. However, imports are now comprised of significantly more services than goods imports. This is a relatively new development as illustrated in Figure 7.4.

Thus, GDP was deemed to be the most suitable measure of economic progress for use in this analysis. Nonetheless, the question remains as to whether an historic relationship between GDP and goods transport is likely to be replicated in the future.

Further research is needed in this area, most notably in defining and measuring suitable economic aggregates. However, the recommended approach for the moment is to utilise a model based on GDP.

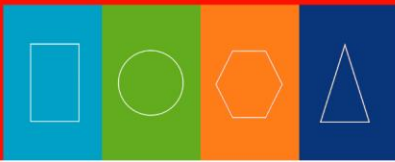
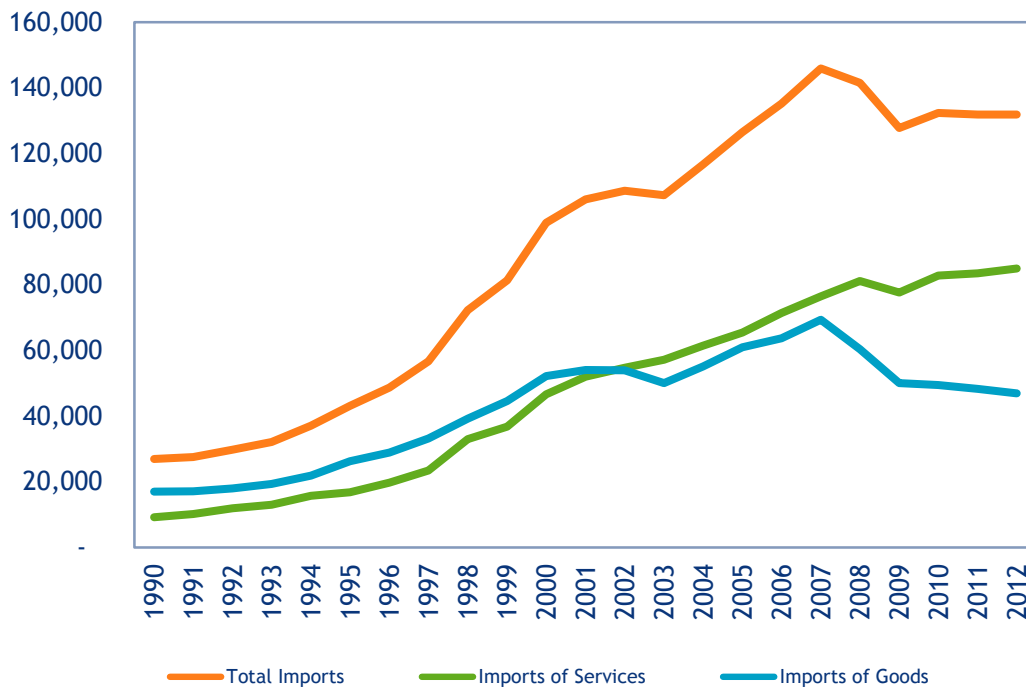


Figure 7.4: Ireland: Imports 1990-2012



Source: AECOM

Economic Projections to 2020

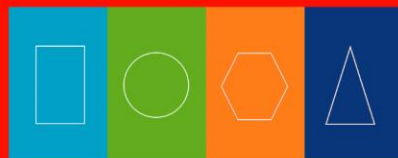
The ESRI's Medium Term Review

The ESRI's MTR, published in July 2013, relied in part on data and analysis of the economy in the period immediately prior to that. This was a period in which the Irish economy continued to endure a recession, with great uncertainty about the path and timing of economic recovery. The ESRI thus adopted three scenarios, as follows.

The Recovery Scenario assumed that the EU economy would return to a reasonable rate of growth over the rest of the decade and that the continuing problems in the Irish financial sector are tackled effectively. Under these circumstances, the export sector of the economy would see its markets grow, resulting in increases in output and employment. In turn, growth in foreign demand would help produce a turnaround in domestic demand. Fundamental to the Recovery Scenario is the fact that as unemployment will initially be high, growth will not be restrained by the labour market.

The Delayed Adjustment Scenario considered what would happen if the EU economy recovered but domestic policy failed to resolve the ongoing problems in the Irish financial system, or if some other event or policy failure prevented the domestic economy from benefiting from a wider economic recovery.

The Stagnation Scenario considered the circumstances where the EU economy would not return to growth in the near future. The result would be a "zombie" decade for the EU and this would have serious consequences for Ireland. The Irish economy, even if managed effectively, would do well to grow at one per cent a year over the second half of the decade.



Economic Scenarios Employed in the Demand Forecast

The ESRI Recovery Scenario was adopted as the more optimistic economic forecast for two reasons. Firstly, it represented a reasonable view of how the economy could recover from the recession. Secondly, at the time of model development, the economy appeared to be recovering more or less in line with the Scenario. The Delayed Adjustment Scenario was adopted as the less optimistic scenario as it is more closely aligned to the economic developments that have unfolded since the MTR was published. Table 7.5 below sets out the anticipated GDP growth forecast in the Recovery and Delayed Adjustment Scenarios.⁴⁵

Table 7.5: GDP Growth Forecasts: ESRI Medium Term Review (2013)

Forecast % Change GDP		
Year	Recovery Scenario	Delayed Adjustment Scenario
2012	0.2%	0.2%
2013	-0.3%	-0.3%
2014	3.0%	1.9%
2015	4.0%	2.7%
2016	4.1%	1.9%
2017	4.2%	2.7%
2018	3.7%	3.0%
2019	3.7%	4.2%
2020	4.0%	4.5%

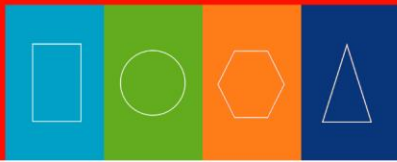
Source: AECOM

Output and Employment Growth

In the wider economy, GDP is expected to grow at a faster rate than the labour force. This difference in the growth rates is driven by innovations and increases in productivity. However, the extent to which growth in output outstrips growth in employment varies between sectors. For example, it is possible that there would be large growth in output in manufacturing without a corresponding increase in employment due to increased automation of processes. However, no indications of a step change in productivity in FTDL were recorded in the primary research. That is not to say that no gains in productivity are expected; productivity changes and innovations are expected. Indeed, quality improvements, such as improved on-time delivery, reduced product damage complaints, out-of-hours delivery and more are expected in the coming years. What is *not* expected is that the sector's performance would advance without a proportionate change in the demand for labour. The scope for a wide differential in output and employment growth in the FTDL sectors, and transport as a whole, is less than that in other sectors. A large proportion (over 60%) of the employment in the FTDL-14 occupations is comprised of drivers; increases in the number of goods vehicles is likely to correspond almost exactly to increased need for drivers.

It is expected that FTDL employment will grow in line with output. The GV fleet forecast was used as a proxy for the change in output in the sector generally but the port and aviation performance forecasts will be used to forecast the growth in occupations that are associated with these modes.

⁴⁵ The rates for 2012 and 2013 are highlighted as these are actual not forecast rates.



Labour Demand Forecast to 2020

Econometric analysis of the relationship between GDP and transport demand (as defined by the goods vehicle fleet, total tonnes handled at Irish ports and total air passengers at Irish airports) was undertaken. The following elasticities were estimated based on the analysis:

- Growth rates in GDP and the goods vehicle fleet have a forecast ratio of 1 : 0.9
- Growth rates in GDP and aviation have a forecast ratio of 1 : 1.3
- Growth rates in GDP and port activity have a forecast ratio of 1 : 0.7

For each per cent change in GDP, a 0.9% change is expected in the goods vehicle fleet, a 1.3% change is expected in the number of air passengers and a 0.7% change is expected in the total tonnes handled at Irish ports.

The data covered the period 1983 - 2012 with the exception of aviation demand. The time series of air passenger data was truncated to 1992. Significant deregulation of the aviation market was implemented by the EU in 1992 and, due to this structural change in the market, the data representing years prior to the deregulation was excluded. The models have excellent explanatory power, with adjusted R^2 values of over 90% in all cases, reflecting the close relationship between transport and GDP. Thus, the growth rates in the transport variables were estimated and these are set out in Table 7.6.

Table 7.6: Forecast Transport Demand Growth Rates

	Recovery Scenario				Delayed Adjustment Scenario			
	<i>GDP</i>	<i>General</i>	<i>Port</i>	<i>Air</i>	<i>GDP</i>	<i>General</i>	<i>Port</i>	<i>Air</i>
2012	0.2%	0.2%	0.1%	0.3%	0.2%	0.2%	0.1%	0.3%
2013	-0.3%	-0.3%	-0.2%	-0.4%	-0.3%	-0.3%	-0.2%	-0.4%
2014	3.0%	2.8%	2.1%	3.9%	1.9%	1.7%	1.3%	2.4%
2015	4.0%	3.7%	2.8%	5.2%	2.7%	2.5%	1.9%	3.5%
2016	4.1%	3.8%	2.8%	5.4%	1.9%	1.7%	1.3%	2.4%
2017	4.2%	3.9%	2.9%	5.5%	2.7%	2.6%	1.9%	3.6%
2018	3.7%	3.4%	2.6%	4.8%	3.0%	2.8%	2.1%	4.0%
2019	3.7%	3.4%	2.6%	4.8%	4.2%	3.9%	2.9%	5.5%
2020	4.0%	3.7%	2.8%	5.2%	4.5%	4.2%	3.1%	5.9%

Source: AECOM

The rates set out above in Table 7.6 represent the forecast change in labour demand. The growth determined by the relationship between goods vehicles and GDP is the primary forecast of and, as such, is used to forecast demand in almost all of the occupations. The growth in demand for port activity is applied to only two occupation categories: 'Ship and hovercraft officers' and 'Marine and waterways transport operatives'. Growth in aviation demand is used to forecast demand for 'Aircraft pilots and flight engineers' and 'Air transport operatives.' In all, 90% of the total baseline employment was advanced to 2020 using the relationship set out above, 6% were advanced using the relationship between aviation and GDP and 3% using the relationship between port activity and GDP. The resulting labour demand forecast is set out in Table 7.7 .

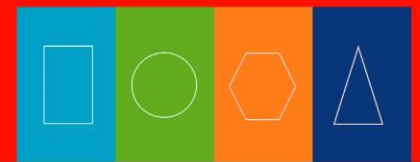


Table 7.7: Demand Forecasts core FTDL occupations - Recovery and Delayed Adjustment Scenarios

Occupation	Baseline		Recovery Scenario		Delayed Adjustment Scenario	
	2011	2015	2020	2015	2020	
Managers & directors in transport & distribution	3,497	3,725	4,460	3,644	4,234	
Managers & directors in storage & warehousing	4,071	4,337	5,193	4,242	4,929	
Aircraft pilots & flight engineers	1,622	1,771	2,276	1,718	2,117	
Ship & hovercraft officers	623	653	747	642	719	
Importers & exporters	332	354	423	346	402	
Transport & distribution clerks & assistants	2,767	2,947	3,529	2,883	3,350	
HGV drivers	19,758	21,047	25,201	20,586	23,920	
Fork-lift truck drivers	3,074	3,275	3,921	3,203	3,722	
Mobile machine drivers & operatives	5,426	5,780	6,921	5,653	6,569	
Train & tram drivers	670	714	855	698	811	
Marine & waterways transport operatives	543	569	651	560	626	
Air transport operatives	1,135	1,239	1,593	1,202	1,482	
Rail transport operatives	999	1,064	1,274	1,041	1,209	
Other drivers & transport operatives	1,278	1,361	1,630	1,332	1,547	
FTDL-14	45,795	48,836	58,676	47,749	55,636	

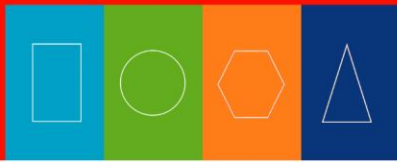
7.6 Demand Forecast Sensitivities

The demand forecast undertaken is an estimate of future demand, based on the best available current and historic information. The forecast is therefore sensitive to a number of assumptions and events in the forecast period that could result in divergence between the forecast and the true demand. Although it is not possible to enumerate all such possibilities, it is prudent to assess the primary risks in a qualitative way.

The economic scenarios on which the demand scenarios depend may be more or less optimistic than the true economic outcome. Indeed, it is unlikely that either scenario will be entirely accurate. Another such possibility is that there will be a more volatile road ahead, with larger swings in GDP than have been forecast but in which the cumulative growth over the forecast period would not be very different to either of the forecast scenarios. However, the ESRI model of the Irish economy is the best available source of such forecasts and it incorporates as much information as is it is feasible to consider in the context of a model. Furthermore, the forecast horizon is now relatively short, at 6 years, and the economic forecasts here are deemed to be within the realms of what could reasonably be expected.

Even in the presence of an accurate economic forecast and the absence of an unexpected economic shock, the forecast could diverge from the true demand should the relationships between transport and GDP become decoupled. The possibilities in this regard are as follows:

- The GDP forecast is accurate but incorporates a large productivity change in transport, thus the employment arising from the change in output will be lower than was forecast. This possibility was addressed in the primary research element of the study; no evidence of a large expected



productivity change in transport was found. Thus, no allowance was made for such a development.

- The GDP forecast is accurate but one or more of the estimated historical elasticities does not hold in the future. For example, it is possible that although the GV fleet and road transport has grown in line with GDP in the past, a limit or saturation level in road transport could be reached. This is a possibility in the long-run but is not expected to develop in the forecast period. Other possibilities are that the ports and aviation activity would not grow in line with the forecast. However, the data available cover sufficiently long periods to extract from the more extreme economic developments of the ‘Celtic Tiger’ and recession. As the economy and transport sectors return to more normal rates of activity, the forecast is expected to come into line with true demand.

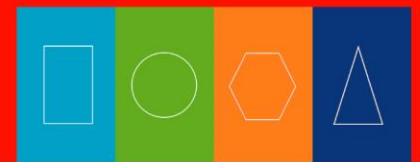
New Entrants required in the Period 2011-2020

The forecasts of supply and demand presented in Sections 7.4 and 7.5 are combined here to give a forecast of the number of new entrants required in the period 2011- 2020. This is referred to as the ‘shortfall’ and represents the number of positions that would be vacant if no new entrants were attracted into the FTDL-14 occupations. As such, the ‘shortfall’ represents the number of additional persons that will be required and indicates the need for recruitment over and above the recruitment required to meet the demand caused by churn or staff turnover. This element of the study excludes the impact of staff turnover because, although high turnover in certain occupations will give rise to additional pressure on the FTDL sector in terms of recruitment, it will not affect the total pool of labour available to meet the demand. Nevertheless this pressure on the sector could be significant and thus it is addressed in a qualitative assessment in Section 4.

The number of anticipated new vacancies arising over the period 2011 to 2020 is expected to be between 18,601 (under the Recovery Scenario) and 15,562 (under the Delayed Adjustment Scenario). Table 7.8 sets out a summary of the results.

Table 7.8 - Summary of Results

	2011 numbers	2015 numbers	2020 numbers	% change 2011 - 2020
Supply				
Baseline employment	45,795	43,722	40,075	-12%
Anticipated Retirees	n/a	2,073	5,720	
Demand				
Recovery Scenario expansion demand	45,795	48,836	58,676	+28%
Delayed Adjustment Scenario expansion demand	45,795	47,749	55,636	+ 21%
‘Shortfall’ Retirees + expansion demand				
Recovery Scenario	n/a	5,114	18,601	
Delayed Adjustment Scenario	n/a	4,027	15,562	



The occupation-level results are presented in Table 7.9. The largest absolute 'shortfall' is expected in HGV drivers as these comprise the largest segment of the group and had a higher proportion of workers nearing retirement than other occupations in the baseline data.

Table 7.9: Baseline employment, forecast demand and shortfall by core FTDL occupations

	2011	2020 Demand		Shortfall 2020	
	<i>Baseline</i>	<i>Recovery Scenario</i>	<i>Delayed Scenario</i>	<i>Recovery Scenario</i>	<i>Delayed Scenario</i>
HGV drivers	19,758	25,201	23,920	8,406	7,125
Mobile machine drivers & operatives n.e.c.	5,426	6,921	6,569	2,230	1,879
Managers & directors in storage & warehousing	4,071	5,193	4,929	1,430	1,166
Managers & directors in transport & distribution	3,497	4,460	4,234	1,381	1,154
Fork-lift truck drivers	3,074	3,921	3,722	1,135	935
Transport & distribution clerks & assistants	2,767	3,529	3,350	951	772
Aircraft pilots & flight engineers	1,622	2,276	2,117	765	606
Other drivers & transport operatives n.e.c.	1,278	1,630	1,547	583	500
Air transport operatives	1,135	1,593	1,482	529	417
Rail transport operatives	999	1,274	1,209	393	329
Train & tram drivers	670	855	811	229	185
Ship & hovercraft officers	623	747	719	230	202
Marine & waterways transport operatives	543	651	626	190	165
Importers & exporters	332	423	402	148	126
FTDL-14	45,795	58,676	55,636	18,601	15,562

The FTDL-14 encompasses four categories of road freight drivers: HGV vehicle drivers, fork-lift truck drivers, mobile machine drivers & operatives, and other drivers & transport operatives. These four categories comprise approximately 60% of the total baseline supply.

The shortfall as a percentage of 2011 employment conveys the quantity of labour needed relative to the baseline quantity. The results are set out in Table 7.10 below. The occupation-level shortfall rates range from 28% to 37% in the Delayed Adjustment Scenario and from 34% to 47% in the Recovery Scenario.

The demand for HGV drivers also ranks highly in terms of relative shortfall: 5th highest, at 43%, in the Recovery scenario and only one point lower than the highest, at 36%, in the Delayed Adjustment Scenario. This reinforces the need for additional drivers in almost any economic scenario. Indeed, even with no change in output, there would be a shortfall of some three thousand HGV drivers resulting from retirements.

The largest relative shortfalls are for aviation workers. This is predominantly driven by the additional demand expected in the aviation sector - aviation workers were relatively young in the baseline data, with 8%-9% aged 55 or over compared to 16% for the FTDL-14 overall. The demand for labour in aviation results more from the performance of the sub-sector than from the age profile.

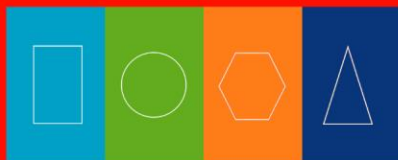


Table 7.10 'Shortfall' as a Percentage of 2011 Employment

Role	Recovery	Delayed Adjustment
Aircraft pilots and flight engineers	47%	37%
Air transport operatives	47%	37%
Other drivers and transport operatives n.e.c.	46%	39%
Importers and exporters	44%	38%
HGV drivers	43%	36%
Mobile machine drivers and operatives n.e.c.	41%	35%
Managers and directors in transport and distribution	39%	33%
Rail transport operatives	39%	33%
Ship and hovercraft officers	37%	32%
Fork-lift truck drivers	37%	30%
Managers and directors in storage and warehousing	35%	29%
Marine and waterways transport operatives	35%	30%
Transport and distribution clerks and assistants	34%	28%
Train and tram drivers	34%	28%
FTDL-14	41%	34%

The extent to which the 'shortfall' arises from the need for replacements for those retiring rather than increased demand varies from occupation to occupation and between the two economic scenarios. Table 7.11 sets out the total shortfall and the shortfall arising from replacement requirements in the Recovery Scenario, while Table 7.12 shows the same information for the Delayed Adjustment Scenario.

Tables 7.11 and 7.12 present an analysis that splits the total number of retirees over two periods: 2011 - 2015 and 2015 - 2020. This is based on the age profile of employees in the baseline data and assumes a retirement age of 65, albeit with an adjustment for those over 65 remaining in the workforce. The model does not make an adjustment for early retirements.

The percent of total shortfall arising from retirements (for the full period 2011- 2020) varies from 13% for air transport operatives to 46% for ship and hovercraft operatives in the Recovery Scenario. While in the Delayed Adjustment scenario, the range varies 17% (air transport operatives) to 53% (ship and hovercraft officers). On the whole, the proportion of the shortfall arising from replacements is approximately 31% or 5,700 of the total 18,600 shortfall in the recovery scenario. While in the delayed adjustment scenario, the total shortfall is 15,500, of which 5,700 are retirements. The remainder of the shortfall arises due to the increase in demand for labour.

The vacancies arising in the period 2015 - 2020 are driven more by the economic developments and increased demand than by retirements. The percentage of the shortfall arising from replacement requirements in the FTDL-14 overall is 27% in the Recovery Scenario and 32% in the Delayed Adjustment Scenario. In fact, a greater number of the baseline employees per annum are projected in the period 2015 - 2020 than in the period 2011 - 2015. This is due to the age profile of the baseline employees. However, the projected performance of the industry is much greater in the second period and thus the gap between supply and demand is dominated by the effect of increased demand.

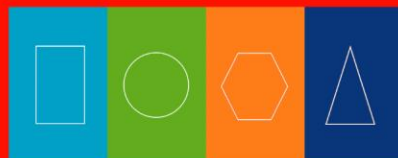


Table 7.11: Potential Job Vacancies Arising from Retirements: Recovery Scenario

Shortfall 2020: Recovery Scenario				
	2011 - 2020 Total 'Shortfall'	Number Retired 2011 - 2020	2015 - 2020 Shortfall	Number Retired 2015 - 2020
HGV drivers	8,406	2,963	6,024	1,870
Mobile machine drivers and operatives n.e.c.	2,230	736	1,587	447
Managers and directors in storage and warehousing	1,430	309	1,076	220
Managers and directors in transport and distribution	1,381	417	1,004	268
Fork-lift truck drivers	1,135	288	831	185
Transport and distribution clerks and assistants	951	189	714	132
Aircraft pilots and flight engineers	765	111	589	84
Other drivers and transport operatives n.e.c.	583	231	408	139
Air transport operatives	529	71	402	49
Rail transport operatives	393	118	296	86
Train and tram drivers	229	44	169	28
Ship and hovercraft officers	230	106	157	63
Marine and waterways transport operatives	190	81	129	47
Importers and exporters	148	56	101	31
FTDL-14	18,601	5,720	13,487	3,647

Source: AECOM

Table 7.12: Total Demand arising from Retirements: Delayed Adjustment Scenario

Shortfall 2020: Delayed Adjustment Scenario				
	2011 - 2020 Total 'Shortfall'	Number Retiring 2011 - 2020	2015 - 2020 'Shortfall'	Number Retiring 2015 - 2020
HGV drivers	7,125	2,963	5,204	1,870
Mobile machine drivers and operatives n.e.c.	1,879	736	1,362	447
Managers and directors in storage and warehousing	1,166	309	907	220
Managers and directors in transport and distribution	1,154	417	859	268
Fork-lift truck drivers	935	288	704	185
Transport and distribution clerks and assistants	772	189	599	132
Aircraft pilots and flight engineers	606	111	484	84
Other drivers and transport operatives n.e.c.	500	231	355	139
Air transport operatives	417	71	328	49
Rail transport operatives	329	118	254	86
Train and tram drivers	185	44	141	28
Ship and hovercraft officers	202	106	139	63
Marine and waterways transport operatives	165	81	114	47
Importers and exporters	126	56	87	31
FTDL-14	15,562	5,720	11,535	3,647

Source: AECOM

Box 7.1: Sensitivity Test

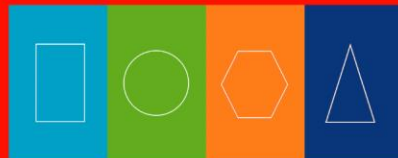
Shortfall incl. Additional 1% Net Outflow per Annum

As discussed in Section 7.4 above the forecast of supply does not include the impact of non-retirement exits from the workforce. Thus the forecast of supply is likely to overestimate the number of persons remaining at work in these occupations in 2020. Such exits include workers effectively retiring to home duties or unemployment and workers returning to education. As data on these exits from the workforce are relatively scarce and since only net outflow is of relevance in this context, the approach taken was to undertake a sensitivity analysis. The analysis assumes the additional impact on supply of a net outflow of 1% per annum.

The sensitivity test shows that, given the assumption of an additional 1% net outflow per annum, extra 3,757 exits from the FTDL-14 occupations would be expected over the period 2011 - 2020 and that just under 2,000 of these would occur in the period 2015 - 2020. The resulting number of vacancies arising would thus increase by approximately 2,000 vacancies overall. The table below compares the number of vacancies arising 2015 - 2020 with and without the sensitivity of 1% for both scenarios. The number of vacancies arising in 2015 - 2020 would increase to a range of 13,500 (Delayed Adjustment) - 15,500 (Recovery) if the assumption of a 1% net outflow per annum were to come to fruition.

	Vacancies arising 2015-2020			
	<i>Expansion +Retirements + Sensitivity</i>		<i>Expansion + Retirement only</i>	
	<i>Recovery</i>	<i>Delayed</i>	<i>Recovery</i>	<i>Delayed</i>
HGV drivers	6,865	6,044	6,024	5,204
Mobile machine drivers and operatives n.e.c.	1,820	1,595	1,587	1,362
Managers and directors in storage and warehousing	1,259	1,090	1,076	907
Managers and directors in transport and distribution	1,156	1,011	1,004	859
Fork-lift truck drivers	968	840	831	704
Transport and distribution clerks and assistants	839	724	714	599
Aircraft pilots and flight engineers	662	557	589	484
Other drivers and transport operatives n.e.c.	461	408	408	355
Air transport operatives	453	380	402	328
Rail transport operatives	339	298	296	254
Train and tram drivers	199	171	169	141
Ship and hovercraft officers	183	165	157	139
Marine and waterways transport operatives	152	137	129	114
Importers and exporters	114	101	101	87
FTDL-14	15,471	13,519	13,487	11,535

Source: AECOM



7.8 Conclusions

The aim of the demand scenarios is to establish the supply and demand for labour in the forecast period and thus to determine the shortfalls that could arise in core Freight, Distribution, Transport and Logistics occupations (the FTDL-14). The analysis evaluated the number of new entrants that would be needed to keep pace with retirements and the additional demand arising from increased output over the forecast period. This in turn informs the need for recruitment and training.

A cohort component analysis was used to determine the 2020 labour supply for the FTDL-14, given an assumed retirement age of 65 and no replacements for those retiring. This analysis revealed that a large number of individuals, drivers in particular, would be expected to retire in the years to 2020. A decline of 12% (approximately 6,000 workers) in total is expected in the FTDL-14 occupations in the period 2011 - 2020.

Since the 1980s, growth in transport demand has reflected increases in real GDP although changes in transport in recent years have been more dramatic than in the wider economy. This reflects the fact that transport was heavily exposed to the boom and bust cycle. This cycle is expected to return to normal activity in the forecast period.

A forecast of FTDL demand was estimated by quantifying the extent to which transport activity grows in line with GDP. Analysis of the relationship between transport and economic activity found elasticities of 0.9 (GV fleet), 1.3 (air passengers) and 0.7 (total port tonnes handled) in the historical data. That is, for every per cent change in GDP:

- An 0.9% change was expected in the Good Vehicle fleet;
- An 1.3% change was expected in aviation demand; and
- An 0.7% change was expected in port activity.

The growth in labour demand in the FTDL-14 was forecast based on the modelled elasticities and two forecasts of GDP (supplied by the ESRI). FTDL-14 labour demand is forecast to increase to between 55,636 (21% increase, Delayed Adjustment scenario) and 58,676 (28% increase, Recovery scenario) from a baseline of 45,795 in 2011.

The demand and supply forecasts were combined to identify the number of additional vacancies, over and above staff turnover, that would arise over the period 2015 - 2020. A sensitivity analysis found that, under an assumption of extra 1% net exits from the workforce per year, approximately 2,000 additional vacancies would be expected overall in the period 2015 - 2020.

Overall therefore, the demand forecast analysis has found that, due to an anticipated expansion in the sector and the replacement demand arising from the retirement /exiting of those employed in core FTDL occupations, that some 13,500 to 15,500 job vacancies could become available over the period 2015-2020 depending on which economic forecast is applied.

Job vacancies would arise for two main reasons: the performance of the sector is expected to grow (accounting for 60% of job vacancy openings) and the number of retirements / other replacement needs estimated (accounting for 40% of job openings). Heavy goods vehicle drivers would comprise approx. 45% of the total potential vacancies in both economic scenarios.



Chapter 8: International Best Practice Review

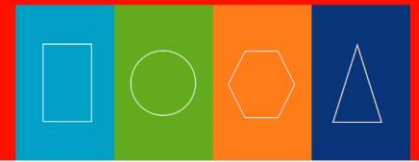
This section is intended to inform recommendations arising from this study by identifying best practice examples from elsewhere and determining how other developed freight sectors have addressed some of the issues identified. These have then been considered, where appropriate, when developing the method by which recommendations can be introduced. The Netherlands, Germany, Singapore, Denmark and the UK are all territories which Ireland could learn from, with well-established apprenticeship schemes, defined career paths, industry participation in vocational education and training, support for workplace learning and SMEs and improved collaboration. This research was undertaken by the EGFSN Secretariat. The nature of the Freight Transport, Distribution and Logistics Sub Sectors and subsequent skills requirement differs to a degree in each country. This is mainly attributable to factors such as geography, domestic market, the structure of the economy and available infrastructure. Despite this, it is clear that there are common challenges faced in the areas of skills development and attraction. Table 8.1 shows the Logistics Performance Index (LPI) scores for the territories discussed in the chapter.

Table 8.1: LPI Scores for Selected Countries

Country	Year	Rank	LPI Score	Customs	Infrastructure	International shipments	Logistics competence	Tracking & Tracing
Germany	2014	1	4.12	4.10	4.32	3.74	4.12	4.17
Netherlands	2014	2	4.05	3.96	4.23	3.64	4.13	4.07
United Kingdom	2014	4	4.01	3.94	4.16	3.63	4.03	4.08
Singapore	2014	5	4.00	4.01	4.28	3.70	3.97	3.90
Denmark	2014	17	3.78	3.79	3.82	3.65	3.74	3.36
Ireland	2014	11	3.87	3.80	3.84	3.44	3.94	4.13

8.1 The Netherlands

Benefiting from a strategic position at the entry point of three major European waterways and with excellent road and rail transport links to the large Central European market, the Netherlands has developed into a major international logistics centre. Over 1,000 American and Asian companies have distribution centres in the Netherlands with Dutch inland shipping alone accounting for 54% of all trade shipping in Western Europe⁴⁶. Excellent infrastructure has developed in the country, with Europe's largest sea port at Rotterdam and the third largest airport in terms of freight transport at Schiphol Amsterdam. In 2011 The Ministry of Economic Affairs, Agriculture and Innovation identified



Logistics as one of nine key sectors of focus for building economic growth. The **Topsector Logistiek** team was set up to ensure the Netherlands competitiveness as a key centre for logistics into the future. The availability of sufficiently trained logistics professionals is seen as one of the key conditions for realising the targets set out in the 2011 *Partituur naar de Top* advisory report. Subsequently a Human Capital Agenda outlined three objectives, namely; increasing the numbers of students currently in logistics training; reaching an optimal level of interaction with industry in the training process including the establishment of **Knowledge Distribution Centers** (KDC's); and retaining employees for logistics.⁴⁷

Dutch Institute for Advanced Logistics (Dinalog)

Dinalog was launched in November 2009 as part of the Governmental Strategic Platform Logistics initiative. Located in Breda, it has since become an integral part of the *Topsector Logistiek* programme and is responsible for boosting innovation in the logistics sector in the Netherlands through initiating and coordinating R&D projects, as well as running seminars, tools and demonstration projects to show how these initiatives work in practice.

Lessons for the Irish Freight, Distribution and Logistics sector: Ireland currently lacks a national 'knowledge centre' for vocational training and education, an issue raised by a number of respondents to the research. Evidence from the Netherlands suggests that a recognised national voice tasked with improving training and education could address some of the issues raised in this research.

8.2 Germany

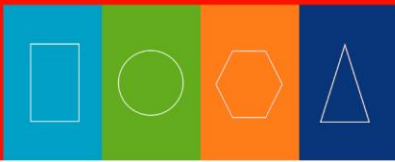
Transport and Logistics is the third biggest sector in the German economy and as such it is vitally important to the economy. In total there are over 390 colleges and universities in the country, producing 11,600 logistics graduates per year (Forschungsagenda Logistik, DVZ 2010). Germany offers an extensive amount of further education options employing the “Dual system”, involving on-site work training backed up by classroom based theoretical learning. Education and Training are identified in the “The Action Plan for Freight Transport and Logistics”⁴⁸ as key components for strengthening Germany’s position as a centre for logistics excellence. The plan outlines key initiatives to improve employment prospects and improve the industry’s image to entice a higher level of prospective employee.

Transport and Logistics Clusters: Training and Education

EffizienzCLuster Logistik Ruhr is Europe’s largest logistics research and Innovation cluster. It brings together twelve scientific institutions and over 160 companies from all stages of the logistics value

⁴⁷ Available online at <http://www.government.nl/issues/entrepreneurship-and-innovation/investing-in-top-sectors/logistics> (Dutch).

⁴⁸ <http://www.bmvi.de/cae/servlet/contentblob/63784/publicationFile/36242/freight-transport-and-logistics-action-plan.pdf>.



chain. The cluster is designed to develop logistics for the future and “*focuses on efficiency gains through the autonomisation of logistical processes and make use of key technologies and data*”.⁴⁹ €40m federal funding has been made available to the cluster since 2010. **LogistikCampus** was opened in 2013 to develop the essential skills in interdisciplinary logistics research.

The Logistics Initiative Hamburg is a network set up by the regional state ministry and the local business community to link the fields of business, science and research. Its objectives are to enhance Hamburg’s profile as a logistics industry location in collaboration with the business development initiatives in the metropolitan region, and encourage comprehensive knowledge transfer to support companies and promote innovation. As well as the initiation of numerous research projects, included in the activity of the network is a task force to deal with training and education for the sector in the region, the main priorities of the group are junior/recruiting, the image of the sector, lifelong learning qualification requirements and sustainable HR management.

Lessons for the Irish Freight, Distribution and Logistics sector: Clustering of research, training and education and employers can result in innovation and greater efficiency in the sector.

German HGV driver shortage and apprenticeships

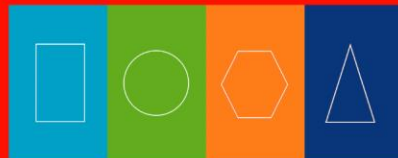
This case study features highlights of a face-to-face interview with the Managing Director of a large German family owned international transport business based in North-East Germany. They operate 70 trucks on a range of contracts including automotive, food and computers and as such are similar to several Irish haulage businesses in their background and commodities moved. The key message is to determine how an apprenticeship scheme solved their staff problems.

Driver shortage in Germany

The driver shortage is a real and increasing problem and currently Germany is 5% short of drivers but an ageing driver population is making this worse. The German population is not growing and most families are down to just 1.3 children and therefore more people will retire than enter the labour market. The average age of drivers is 48, and 85% are more than 40 years old. Germany has 600,000 drivers and if they work for on average 20 years in the sector, there is a need for 30,000/year to be trained. At the moment it is reported that only 2,500/year are being trained which is a large shortfall as it is estimated that 30,000 leave the industry every year. So the country has been training less than 10% of the future requirement.

Unemployment benefit is said to be so generous that it doesn’t encourage people to work in transport. In some countries such as the Czech Republic this is not the case. Incentives are needed to get unemployed back into work, but some potential staff have the wrong mindset and culture. Another factor affecting the supply of drivers is since 2011 the Army does not train soldiers to have truck driving licences and this is regrettable as this was the best training school.

⁴⁹ http://www.ci-3.de/sites/default/files/field_page_file/spitzenclusterbroschuere_neuaufgabe.pdf.



What are the causes of these shortages?

Less people with suitable driving licences as insufficient are being trained

Ageing problem with more retiring than joining the industry

Business activity in Germany is increasing and hence more vehicles are needed

There are less drivers from Poland wanting to stay as their economy is growing and wage rates are improving meaning people would prefer to live in their country

The most recent tightening of the EU Driver's Hours Rules that increase the need for rest to 9 hours from 8 hours.

The rule change that stopped those with just a car licence from driving anything between 3.5-7.49 tonnes. This has meant more trucks drivers are needed to cater for these vehicles

The requirement to have a day's training each year means around 0.5% of drivers are on training at any one time.

Fewer part-time people are available as the requirement for them to comply with the training regulation still applies.

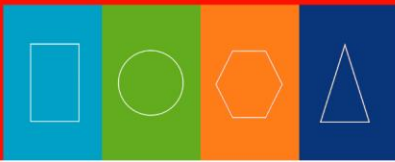
Even when drivers are at work, a significant amount of their working day is spent at loading & unloading points.

Driver shortage in the company

Yes, for a transport business the driver is the most important thing and we have experienced a shortage of drivers in the past especially before the recession. But we have actively worked to solve the problem. Agency drivers are too expensive, not reliable and more accident prone. We have tried using foreign drivers and given the required training, Polish/Czech drivers are hardworking and competent; but the main problem is that many of our customers want the driver to be German speaking and communicate properly.

Solution has been an Apprenticeship Scheme and a Positive Marketing video

The industry is facing a shortage of trained staff and it's important that people are attracted to the industry. We have produced a video as part of our recruitment process. Thanks to the apprenticeship scheme and the fact that the company is a preferred one to work for this is not currently a problem. There are Universities offering Transport & Logistics degrees and this is suitable for major companies taking on staff for future senior roles. But this company has a well-developed and successful "apprenticeship" scheme and believes in promoting people working up from the bottom on merit and aptitude. They generally take about 5 young people a year from the age of 16 upwards and train them in various aspects of the job; warehousing, working in the traffic office, driving vans and when they are old enough, driving HGVs. Typically they will have 3 years of training where they spend 3 days working in the company and 2 days at college, so mixing theory with practice. Over this time the people can decide which type of job they like the best, which department they prefer and whether they will become a driver. In all cases it gives the new, generally enthusiastic staff a good introduction to the whole workings of a transport and distribution company and this leads to more understanding and engaged staff.



8.3 Singapore

Singapore has taken advantage of its position at the nexus of a large network of shipping lanes, by building a world-class infrastructure, including not only excellent facilities but also efficient customs handling and trade friendly tax policies. Furthermore despite high land and labour rents relative to its neighbours, a 2009 Frost & Sullivan study found that Singapore had the lowest cost of logistics as a percentage of total sales in the ASEAN region at approximately 8%.⁵⁰ In the study this is attributed to an educated and skilled workforce, the high quality and wide range of logistics services, highly efficient logistics operations and an excellent information system and infrastructure. In 2012 the **National Productivity and Continuing Education Council (NPCEC)** endorsed a five year “Logistics and Transportation Productivity Roadmap” with an allocation of \$42m worth of funding. Drawn up by the Singapore Economic Development Board (EDB) and SPRING Singapore,⁵¹ the roadmap is focused on enhancing Supply Chain Management Expertise and innovation as well as efficiency at enterprise and industry levels. The **Centre of Innovation for Supply Chain Management (COI-SCM)** was opened in 2013 and is designed to be a one-stop platform to assist companies in enhancing efficiency gains and developing expertise through SCM diploma courses, continuous education and industry specific training. SME’s are a specific focus of the project, and they apply for free training using of SPRING’s Innovation & Capability voucher.⁵²

Lessons for the Irish Freight, Distribution and Logistics sector: Collaboration between SMEs and education providers can address issues relating to a lack of influence over courses and adequate training in smaller companies. It also demonstrates that efficiency and innovation that can have the greatest effect on costs, not always attempts at being lean.

8.4 Denmark

Located between the large central European market and Northern Europe, Denmark has the potential to develop into a significant logistics hub.⁵³ As a trading nation it relies heavily on its road and port services with shipping (60%) and Trucking (33%) accounting for 93% of all freight transported internationally from Denmark⁵⁴ (However plans are afoot to improve rail infrastructure as a greener alternative to road transport⁵⁵). In the 2011 report “*Danmark som transport-land i det international*” the Danish Ministry for Transport identified education research and innovation as key areas of focus for growth, citing the need for knowledge to exploit the added value of efficient logistics in the transport sector. Several recent achievements are mentioned in this area including a new bachelor’s degree in Value Chain Management, the upgrading of statutory training for truck

⁵⁰ Frost & Sullivan (2009) ASEAN Logistics End Users - Trends and Preferences press release. 23.12.2009, available at <http://www.frost.com/prod/servlet/market-insight-top.pag?docid=188456835>.

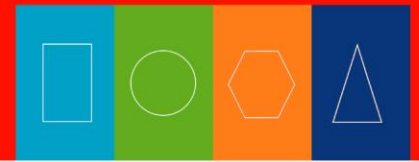
⁵¹ SPRING Singapore is an agency under the Ministry of Trade and Industry responsible for helping Singapore enterprises grow and building trust in Singapore products and services. As the enterprise development agency, SPRING works with partners to help enterprises in financing, capability and management development, technology and innovation, and access to markets.

⁵² The Innovation & Capability Voucher (ICV) is an easy-to-use voucher valued at \$5,000, to encourage SMEs to take their first step towards capability development.

⁵³ <http://www.investindk.com/Why-Denmark/A-perfect-hub>.

⁵⁴ <http://www.trm.dk/-/media/Files/Publication/2011/Danmark%20som%20Transportland/Danmark%20som%20transportland.pdf>.

⁵⁵ <http://www.trm.dk/-/media/Files/Publication/English/EUpredcedency%202012/A%20greener%20transport%20system-netversion.ashx>.



drivers (in line with the 2009 EU Training Initiative) and the initiation of the MSc in Transport and Logistics at Technical University of Denmark.

Additional Provisions for training, education and knowledge innovation

The Transport Innovation Network

In 2009 the Transport Innovation Network was set up. It comprises of a national, cross disciplinary network aimed at the Danish Transport sector.⁵⁶ The primary objective is to create synergy, encourage match-making and generate research and development projects between stakeholders in the transport sector and research/educational institutions, and also reach out to related sectors such as energy and infrastructure.

Vocational Training in transport and logistics and the Transport Training Board

Vocational education and training in Denmark generally begins at the upper secondary level. Vocational training is state funded and there are at present 117 institutions offering programmes most of which are technical colleges. Currently there are 7 main programmes offered in the field of Transport and Logistics, including Air Transport, Warehouse Training, Freight Transport by rail and road, and Port and Terminal Training.⁵⁷ Each programme employs the dual principle of on the job training and class based learning in a sandwich system. The Transport Training Board (TUR) is the statutory body established to “set national standards and goals for all apprenticeship training for operative personnel of the transportation sector in Denmark, as well as for all labour market training for the same sector”. It is also responsible for overseeing the administration of state sponsored adult vocational education known as AMU.

Guidance and Further Education Opportunities from VET

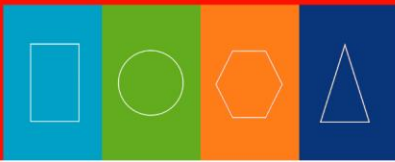
There are considerable career guidance resources in place for participants in the IVET and AMU systems. This includes access to four types of career guidance centres. The Ministry of Education maintains an online guidance portal <http://www.ug.dk>. These resources are designed to allow for individualism in the system, and ensure that there are coherent progression paths to suit students' needs and experience level. TUR provide information regarding the provision of courses in Denmark and advice for students. The Danish Education system is designed to allow students progression to any education path from all points in the system. Short-Cycle higher education programmes last for up to two and a half years and professional bachelor programmes are three to four years.

Transport Centres

Several logistics clusters have developed in Denmark, beginning with the opening of Gateway E45 in 1987. These centres generally comprise of a number of Freight Distribution Centres with ancillary Services. The Scandinavisk Transport Center in Koge for example connects road rail and port

⁵⁶ TINV is one of 20 innovation networks supported and co-financed by the Danish Agency for Science, Technology and innovation.

⁵⁷ The remaining programmes are train maintenance, passenger transport, and Rescue training. For more information see http://www.ug.dk/uddannelser/erhvervsuddannelsereudveud/transportoglogistik/om_indgangen_transport_og_logistik.aspx (Danish).



facilities, and has a large business park in close proximity. The benefit of clustering is described as helping SME's pool together to provide training courses and establish facilities (such as truck driving simulators) as well as increasing the scope for knowledge sharing across modes.⁵⁸

Lessons for the Irish Freight, Distribution and Logistics sector: Vocational training at a young age prepares entrants for a career in the sectors and ensures there is a sufficient supply and quality of staff. Denmark has proven that apprenticeships in the sector can be a vital means of improving the effectiveness of the sector.

8.5 UK

The UK has a large transport and logistics sector, employing approximately 7% of the UK's total workforce, with the transport and storage alone employing over 1.75m people.⁵⁹ Amongst other provisions £4m was allocated to improve training and the attractiveness of the sector for prospective employees. Two sector skills reports for the transport and storage and wholesale and retail sectors were produced. Priority areas identified included attracting new recruits, particularly in light of the sectors image problems; producing clear pathways; professionalising the workforce and increasing business investment in skills development.

Additional Provisions for training, education and knowledge innovation

Skills for Logistics (SFL)

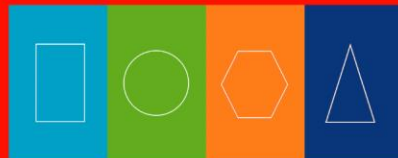
SFL are tasked with designing and delivering solutions to address the employment and skills challenges faced by the Logistics Sector. The Skills for Logistics group vision is to attract and develop talent into the industry, develop solutions which enable people to progress their careers and support employers and individuals as they engage with and reform the skills system. In addition, the SFL group also regularly responds to government consultations and are involved in the provision of education and training at a vocational level.

The stairway.org

The Professional Development Stairway has been developed to provide the logistics industry with a career development framework that enables employers and employees to plan and map career progression and provide the foundation on which to base structured Continuous Professional Development programmes. Available as an interactive tool at www.thestairway.org, the stairway provides 6 clear career levels for 4 different specialised job categories (namely, Maritime and Port Operations, Storage and Handling, Supply Chain and Transport). Each role gives a description of the work, outline of necessary qualifications and training as well as further information regarding its provision where applicable.

⁵⁸ http://www.spatial.baltic.net/_files/NeLoC_Report.pdf.

⁵⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3819/logistics-growth-review.pdf and https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/306422/briefing-paper-ssa12-transportation-storage.pdf.



HR Toolkit

The toolkit is a guide that has been developed to provide a basis for employers to develop and enhance their appraisal systems.

Delivering your Future

Delivering your future is a campaign to increase knowledge of the logistics industry amongst young people, with a view to securing quality recruits in the future. It is aimed primarily at young persons but also those who influence them such as parents and teachers.

Other SFL Tools and Initiatives

The Logistics Locker is a series of resource toolkits developed to attract, engage and develop the future skills and talent needed in the UK logistics industry. Four individual Logistics Lockers have been devised and created to allow students, graduates, current employees and employers respectively easy access to information which will allow them to “increase the levels of productivity, employability and recruitment within this vital sector”.

Vocational Training

Vocational education and training (VET) is offered at most levels of the qualifications frameworks in the UK. However in recent years there has been a renewed policy to make skills training and development more employers driven. This is in light of a perceived discrepancy between publically funded training based on qualifications and private training based on employer needs.

Further Education

The FTA list over 142 higher education level courses in logistics and related subjects in the UK as provided by Further education colleges and Universities.⁶⁰ These range from foundation degrees to PhDs, covering a wide range of topics from Supply Chain Management to Transport and Business Management at Aston University to a BSc in Food Logistics as offered by the University of Wales, Trinity St David.

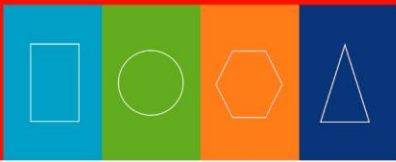
Lessons for the Irish Freight, Distribution and Logistics sector: Career pathways, once established and accepted by industry, can have a significant impact on progression and the perception of the industry.

8.6 Selected EU and International initiatives

European Union Lifelong Learning Program

In recent years there have been several EU projects initiated in the area of talent development within the sector. The Certificate for Employment in Transport and Logistics in Europe (CENTRAL) was a project that was part of a wider European strategy to provide an integrated approach to vocational training that can be recognised by each nation within Europe. The project was

⁶⁰ http://www.pwc.be/en_BE/be/publications/2014/the-logistics-report-2013.pdf.



administered by AFT-ITM in France, with partners coming from Hungary, Germany, Belgium Italy and the UK. The outputs including European wide job classifications, the European qualification frameworks for the selected jobs and the ECVET linked training course all of which are available on the projects website.⁶¹

Horizon 2020

Horizon 2020 is the EU's largest ever research and innovation programme with an overall allocation of €80bn worth of funding available to participants. With an allocation of €6.339bn *Smart, Green and Integrated Transport*, is identified as a key societal challenge. In the work programme for 2014-2015 there are calls for proposals under three headings namely, *Mobility for Growth, Green Vehicles* and *Small Business and Fast Track Innovation for Transport*. A Transport Research and Innovation Portal has been set up to provide information on research projects and supports in the EU and further afield.

WINN (European Platform Driving Knowledge to Innovations in Freight Logistics) was established to build a collaboration framework between already established networks in freight logistics operating in different areas and in different geographical levels. Subsequently in 2013 **ALICE, the European Technology Platform (ETP)** on Logistics was launched. Shippers and logistics service providers, transport companies, terminal operators, support industry and institutes of research and education are encouraged to participate in the activities of **ALICE**. At present there are five working groups, Sustainable; safe and secure supply chains; Corridors, hubs; Supply Chain Coordination and Coordination; and Urban Logistics.

Air Cargo Industry Education and Training Taskforce

In 2011, a taskforce was formed consisting of representatives of the International Air Transport Association (IATA), International Association of Freight Forwarder Associations (FIATA), International Civil Aviation Organisation (ICAO) and The International Air Cargo Association (TIACA). The goal of the taskforce was to create a foundation for the development and delivery of the necessary education and training tools that are needed to provide a well-educated workforce for the worldwide air cargo and logistics industry. The final report was published in 2014 and found that the availability of programmes that teach the higher-level, soft, skills are limited. Included in the report is a matrix containing skills groups matched with specific job roles within the industry, as well as the source of education and training for each skill group by job position. There are 13 broad hard and soft skill groups identified.⁶²

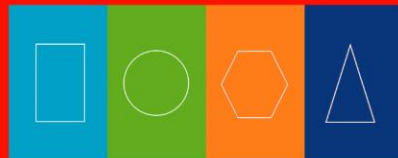
8.7 Conclusions

It is clear that there is much to learn from countries with leading freight sectors. Many of the training and development issues identified in this report are being addressed in these countries.

⁶¹ <http://www.logisticsqualifications.eu/>.

⁶² Full Report available

<http://www.tiaca.org/images/tiaca/ERC/140101%20Air%20Cargo%20Industry%20Education%20and%20Training%20Task%20Force%20-%20Final%20Report%20v5.pdf>.



Chapter 9: Recommendations

9.1 Key Strategic Themes

It is clear that in order to meet the challenges and respond to the opportunities identified in this report a range of measures will need to be introduced to ensure that skills in the sector are sufficient to continue supporting the wider economy. There are four key strategic themes relating to skills development that effectively determine whether logistics organisations will have the capability to meet their operational demands in the future (Figure 9.1). Generally companies will consider each element separately, although gaps in one area may have an impact on another. For example having a well-established progression pathway will require clear development plans and if someone is promoted or transferred into another role then that will initiate a recruitment need.

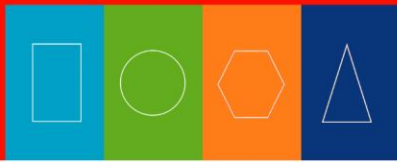
Figure 9.1 illustrates the relationship, where all four elements need to be considered if organisations are aiming to achieve success through optimisation of their human resources.

Figure 9.1: Key Strategic Themes



Source: AECOM

Under each theme companies need to have sufficient data to help them plan and prepare a clearly defined skills strategy, and this report has identified a variety of key learning points that can be shared and disseminated across the sector to help support this. It would be advisable however for companies to look specifically at their own skill needs and to fully understand the link between skills and performance. This could be a challenge for many companies where they may not have the



internal expertise available to actually complete this task. Typical questions that a company would need addressing are highlighted below under each theme, however as a recommendation in supporting the sector, help for organisations in assessing their own organisational skills needs from 2014-2020 might be beneficial.

Recruitment

- What is the current age profile for the various roles in our company and how does it compare to those in the sector?
- How do we attract new talent into our company?
- What talent are we looking to attract?
- Are comprehensive role profiles available that highlight skills, knowledge, qualifications and competencies expected for each role?
- What information is available to new entrants interested in joining our company/ sector?

Development

- What learning is currently available to up-skill and re-skill employees?
- How is it delivered and is it readily accessible to meet our company needs?
- Who is delivering it and how is it quality checked?
- Has future needs for each occupational role been identified?

Retention

- How do we ensure that we retain our most talented employees?
- What internal systems do we have in place for aligning skills with performance?
- How do we perform exit interviews and what are the main reasons for leaving?

Progression

- What work based learning is available to employees to help them develop new skills?
- How do we develop our existing employees and how does it compare with other companies?
- How are individuals identified for promotion within our company?

From the various research activities, key discussion points relating to skills were identified that would influence and impact the operational performance of organisations, either directly involved in activities linked to logistics (e.g. Third Party Logistics providers) or indirectly via a supply chain requirement (e.g. manufacturing operations who subcontract their logistics activities).

9.2 Operational Skills Risks Identified

Table 9.1 identifies the operational skills risks that were identified and the potential root causes for each. Consequently these form the basis for recommendations to meet any forecasted skills gaps or needs.

Table 9.1: Operational Skills Risk Matrix for Logistics in Ireland 2015-2020

	Operational Skills Risk	Root Causes	Impact	Proposed Actions
1	<p>Potential driver shortage as number of new drivers entering the sector with required licence (e.g. C, C1, C+E, C1+E) doesn't meet the recruitment gap from those leaving, mainly through retirement.</p>	<ul style="list-style-type: none"> ▪ Current driver age profile (50+). ▪ Driving not perceived as being a job requiring much skill. 	<p>High This will be a similar issue across Europe; therefore competition for good quality drivers could be fierce in the next ten to fifteen years.</p>	<ul style="list-style-type: none"> ▪ Develop models of best practice for up-skilling and re-skilling where 'lower skilled' employees recruited and developed into 'higher skilled' Cat C+E drivers. ▪ Subsidised licence acquisition for unemployed or 'young driver' schemes. ▪ Offer career paths in the sector to allow drivers progression routes into senior driver, driver trainer or even driver management. ▪ Raise profile of the sector and 'professionalise' the role. Create image that markets the role and the importance of drivers to the Irish economy. ▪ Maybe development of new DCPC module to train drivers in self-promotion.

Operational Skills Risk		Root Causes	Impact	Proposed Actions
2	Lack of young talent (16-25) entering the sector to meet the gaps left by those retiring.	<ul style="list-style-type: none"> ▪ Sector profile low amongst 18-25 year olds ▪ Lack of career pathways available ▪ Lack of sector knowledge available to career advisors/schools ▪ No established apprenticeships or other type of programme that aligns work based learning with qualifications. ▪ Stiff competition from other sectors to recruit the best. 	High	<ul style="list-style-type: none"> ▪ Develop a schools/career service communication toolkit for the sector. ▪ Develop a career map for the sector highlighting opportunities for personal development. ▪ Form a ‘Common Purpose’ working group activity for the sector with all key stakeholders engaged (i.e. trade associations, professional bodies, enterprise agencies educational institutes and other key stakeholders) ▪ Engage companies that already work with schools to share their knowledge, and encourage others to get actively involved, in promoting the sector.

Operational Skills Risk		Root Causes	Impact	Proposed Actions
3	Increased regulatory activity and more complex/technical global supply chain activities.	<ul style="list-style-type: none"> Global supply chains with higher risks of non-compliance. Threat of counterfeit products entering supply chains. Security risks associated with transporting high value goods. Poor quality raw materials from high risk, poor quality standards countries- big risk in the pharmaceutical industry as life threatening. 	High	<ul style="list-style-type: none"> Further development of the Good Distribution Practices (GDP) passport to align with academic awards and links to national standards. Advances in technology required to meet the demands of increased compliance threats. Links with industry and university research to identify needs and develop solutions then communicate with industry Develop similar Good Distribution Practices passport schemes for other sectors where none currently exist (e.g. Food and drink)
4	Difficulty recruiting into the sector, especially for certain specialist or unfamiliar roles e.g. freight forwarder	<ul style="list-style-type: none"> Perception of industry poor. Lack of females interested in working in the sector. Lack of understanding about the roles and opportunities available. 	Medium	<ul style="list-style-type: none"> Career advice for the sector with specific roles that might be attractive to those with certain skillsets. Identify potential recruits from the unemployed market.

Operational Skills Risk		Root Causes	Impact	Proposed Actions
5	Companies don't invest in training their employees to meet future business demands.	<ul style="list-style-type: none"> ▪ No incentives. ▪ Unable to match skills gaps to performance- no performance management systems in place. ▪ No measure for return on training investment. ▪ Lack of training availability 	Medium	<ul style="list-style-type: none"> ▪ Provide guidance to support companies in identifying skills needs and best options for employee development (e.g. online support tool) ▪ Develop case studies showing the value of skills development to industry.
6	Poor quality of existing training provision and lack of availability to meet company's expectations of cost, location and time.	<ul style="list-style-type: none"> ▪ Unregulated training providers. ▪ Lack of recognised and accredited courses available to develop skilled training expertise. ▪ Lack of understanding of true sector needs by training providers. ▪ Most companies will only commit to mandatory training requirements and avoid other types of training. 	Medium	<ul style="list-style-type: none"> ▪ Create a quality kitemark for Irish logistics training provision. ▪ Investigate opportunities to offer more local provision and/or distance learning programmes. ▪ Support for organisations to develop internal work based learning activities.

	Operational Skills Risk	Root Causes	Impact	Proposed Actions
7	Increased security threats when transporting goods, especially when using multiple modes of transport.	<ul style="list-style-type: none"> ▪ Global instability and ▪ Increased threat of terrorism. ▪ High value goods and increasing threat of theft. Counterfeit products entering the market. 	Medium	<ul style="list-style-type: none"> ▪ Global networking practices to ensure knowledge is captured and disseminated quickly. ▪ Best practice guidance for logistics operators covering each mode and goods being stored or transported. ▪ Logistics security training course
8	Global supply chains being operated remotely from within Ireland but requiring extensive knowledge of specific issues relating to the global export community.	<ul style="list-style-type: none"> ▪ Growth in Ireland due to location and reputation. 	Medium/ Low	<ul style="list-style-type: none"> ▪ Create global communication networks for sharing knowledge. ▪ Structured and accredited training courses for employees.
9	<p>Sector performance affected due to a sufficient lack of support staff, or the quality of their service, to ensure that operational performance is not compromised. Typical logistic support roles are:</p> <ul style="list-style-type: none"> ▪ Vehicle maintenance fitters, technicians, mechanics etc. ▪ Specialist technicians-e.g. refrigerated vehicles/warehouses ▪ IT support- general and software system specific. ▪ Others- Quality experts, HR 	<ul style="list-style-type: none"> ▪ No established programmes available for training support staff. Support staff not always current in their knowledge and may learn purely on the job. 	High/ Medium	<ul style="list-style-type: none"> ▪ Develop sector standards for roles ▪ Implement training programmes aligned to accreditation. ▪ Identify gaps where programmes don't currently exist ▪ Review quality of existing programmes. ▪ Look at other established European work practices for ensuring CPD of staff and improved quality of service.

	Operational Skills Risk	Root Causes	Impact	Proposed Actions
10	<p>Management often lacking the skills and competencies to meet the current and future requirements of a logistics company operating in Ireland. Typical skills required are:</p> <ul style="list-style-type: none"> ▪ Managing Compliance ▪ Change Management ▪ Risk Management and Contingency Planning ▪ Lean processes ▪ People management ▪ Effective networking and negotiation 	<ul style="list-style-type: none"> ▪ No incentives for smaller organisations to develop their staff. ▪ Lack of time/money. Logistics culture of learning by often ‘just doing it’. ▪ Managers often too busy to participate in development programmes- possibly fire fighting problems. ▪ Certificate of Professional Competence seen as the qualification of choice for transport managers yet it’s mostly based on managing compliance. 	Medium	<ul style="list-style-type: none"> ▪ Build on existing programmes that are currently available and already meet sector needs. ▪ Develop new modules that are sector specific and capture key learning points on world class management techniques for logistics e.g. Finance for Transport Operations, Optimising Vehicle utilisation ▪ Develop CPC plus qualifications to offer progression to a higher level of educational attainment and more emphasis on people management and continuous improvement.
11	Delays in processing goods through customs.	<ul style="list-style-type: none"> ▪ More complex customs systems. ▪ Lack of adequate skills and knowledge by all personnel involved in processing documentation. 	Medium	<ul style="list-style-type: none"> ▪ Establish new course for customs.

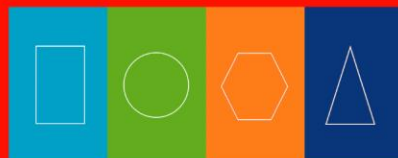
Operational Skills Risk		Root Causes	Impact	Proposed Actions
12	Increasing pressure on logistics companies to operate leaner and greener.	<ul style="list-style-type: none"> ▪ EU and global emission targets. ▪ Increasing transportation costs. ▪ Reducing carbon footprint. ▪ Changing customers' expectations and demands. 	Medium	<ul style="list-style-type: none"> ▪ Government initiated lean skills awareness and other improvement projects. ▪ Develop good practice guides for industry e.g. similar to the Managing Timber Transport Good Practice Guide.
13	Increased activity in sea and air freight, requiring new and developing skillsets.	<ul style="list-style-type: none"> ▪ Global markets, new trading partners. ▪ Lower volume, higher value goods being transported with quality and time critical delivery expectations. ▪ Food export is a key growth sector resulting in increased sea freight activity. ▪ Increased use of technology to ensure shipment times are met. 	Low	<ul style="list-style-type: none"> ▪ Identify gaps in provision against those courses that already exist.

9.3 Priority Recommendations Matrix

Table E 6 presents a list of priority recommendations which address identified skills development requirements of the sector. Recommendations made, which are detailed in the Executive summary are denoted by time-period for implementation: Short-term (1 to 2 years), Medium-term (2 to 3 years), and Long-term (3 to 5 years). Each recommendation denotes the Lead Partner(s) for its implementation.

Table E 6: Priority Recommendations Matrix

Recommendation	Primary /2 nd Level Education	3 rd Level Education	Training	Lower skilled	Management	Air Freight	Sea Freight	Rail Freight	Road Freight	Freight Forwarding
1. Develop a Freight, Distribution and Logistics Skills Engagement Group.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. Develop National Occupation Standards to create career pathways in a variety of FTDL roles.		✓	✓	✓	✓	✓	✓	✓	✓	✓
3. Develop new Apprenticeship programmes related to sector starting with HGV Drivers and Warehouse & Storage apprenticeships.		✓	✓	✓		✓	✓	✓	✓	✓
4. Develop a schools/career service communication toolkit for the sector.	✓	✓	✓	✓		✓	✓	✓	✓	✓
5. Build up FTDL SMEs Management capabilities.		✓	✓		✓	✓	✓	✓	✓	✓
6. Build-up Project Management, Logistical and Procurement Skills.		✓	✓		✓	✓	✓	✓	✓	✓
7. Improve training provision for Freight Forwarders and Customs Brokers.		✓	✓	✓		✓	✓	✓	✓	✓
8. Introduce sector specific IT user courses at all levels from lower skilled to management level.			✓	✓	✓	✓	✓	✓	✓	✓
9. Develop 'soft skills' courses aimed at management-level. Integrate into training/education provision at all levels particularly lower skilled.		✓	✓	✓	✓	✓	✓	✓	✓	✓
10. Develop a Lead Centre for the provision of third-level FTDL Education Courses.		✓	✓	✓	✓	✓	✓	✓	✓	✓
11. Boost Third Level Logistics course provision and improve practical experience in courses.		✓	✓			✓	✓	✓	✓	✓
12. Ensure a supply chain module is included in 3 rd level business degree courses.		✓			✓	✓	✓	✓	✓	✓
13. Improve employers and students' knowledge of current FTDL course provision.		✓	✓	✓	✓	✓	✓	✓	✓	✓

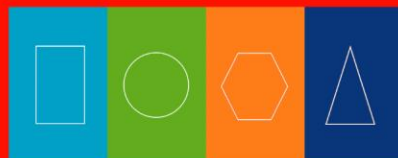


Appendix A: Steering Group Members

Name	Organisation
Pat Ivory	IBEC (Chairperson)
Richie Smith	Hays Recruitment
John Bolton	IDA Ireland
Niall Coulston	Enterprise Ireland
Catherine Grant	Enterprise Ireland
Neil Mc Donnell	Freight Transport Association
Liz Carroll	ISME
Peter Brown	Higher Education Authority
John Mc Grath	SOLAS
Hendrik Van Der Kamp	Dublin Institute of Technology
Declan Carolan	ECR Group
Declan Freeman	Irish Continental Group
Marie Bourke	Department of Jobs, Enterprise and Innovation
Gerard Walker (project manager)	Department of Jobs, Enterprise and Innovation
Eamonn O'Connor	Intern assisted the work of the Secretariat

Appendix B: Members of the Expert Group on Future Skills Needs

Name	Organisation
Una Halligan	Chairperson
Marie Bourke	Head of Secretariat, Department of Jobs, Enterprise and Innovation
Inez Bailey	Director, National Adult Literacy Agency
Peter Baldwin	Assistant Secretary, Department of Education and Skills
Ray Bowe	IDA Ireland
Liz Carroll	Training and Development Manager, ISME
Ned Costello	Chief Executive, Irish Universities Association
Margaret Cox	Managing Director, I.C.E. Group
Bill Doherty	Executive Vice President, EMEA, Cook Medical
Tony Donohoe	Head of Education, Social and Innovation Policy, IBEC
Bryan Fields	Director, Curriculum Development / Programme Innovation, SOLAS
Sonia Flynn	EMEA Director for User Operations, Facebook
Joe Hogan	Founder, Chief Technology Officer & VP Openet Labs & IP Management
Deirdre McDonnell	Principal Officer, Department of Education and Skills
Jerry Moloney	Director of Skills, Enterprise Ireland
Frank Mulvihill	Former President of the Institute of Guidance Counsellors
Brendan Murphy	President, Cork Institute of Technology
Dermot Nolan	Principal Officer, Department of Public Expenditure and Reform
Alan Nuzum	CEO, Skillnets
Peter Rigney	Industrial Officer, ICTU
Declan Hughes	Assistant Secretary, Department of Jobs, Enterprise and Innovation
Mary-Liz Trant	Higher Education Authority



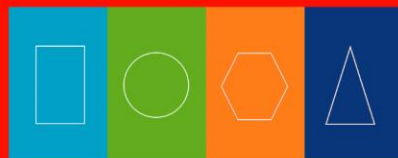
Appendix C: Recent Publications by the Expert Group on Future Skills Needs 2012 - 2014

Report	Date of Publication
Regional Labour Markets Bulletin 2014	September 2014
Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2014	August 2014
National Skills Bulletin 2014	July 2014
Vacancy Overview 2013	May 2014
Assessing the Demand for Big Data and Analytics Skills, 2013 - 2020	May 2014
The Expert Group on Future Skills Needs Statement of Activity 2013	March 2014
Regional Labour Markets Bulletin 2013	March 2014
Guidance for Higher Education Providers on Current and Future Skills Needs of Enterprise: Springboard 2014	February 2014
Addressing Future Demand for High-Level ICT Skills	November 2013
Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2013	July 2013
National Skills Bulletin 2013	July 2013
Future Skills Requirements of the Manufacturing Sector to 2020	April 2013
The Expert Group on Future Skills Needs Statement of Activity 2012	April 2013
Guidance for Higher Education Providers on Current and Future Skills Needs of Enterprise: Springboard 2013	February 2013
Vacancy Overview 2012	February 2013
Regional Labour Markets Bulletin 2012	January 2013
Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs 2012	July 2012
National Skills Bulletin 2012	July 2012
Key Skills for Enterprise to Trade Internationally	June 2012
EGFSN Statement of Activity 2011	April 2012
Vacancy Overview 2011	February 2012
Guidance for Higher Education Providers on Current and Future Skills Needs of Enterprise <i>(Forfás report based on EGFSN identified future skills needs)</i>	February 2012
Addressing High-Level ICT Skills Recruitment Needs: Research Findings	January 2012

Appendix D: Assessment of the domestic supply of relevant education and training provision in the FTDL Sector in Ireland

Third Level Provision

Course Title	Provider	NFQ Level/Duration	Enrolment Numbers	Graduate Numbers
MSc Supply Chain Management	UCD Smurfit Business School	Level 9 (full-time 1 year/part-time 2 years)	2011/12: 34 full-time & 8 part-time 2012/13: 31 full-time & 10 part-time 2013/14: 41 full-time & 6 part-time	2011: 32 full-time & 4 part-time 2012: 34 full-time & 3 part-time
MSc in Strategic Procurement	Dublin City University	Level 9 - part-time over two years	2011/12: 48 part-time 2012/13: 22 part-time	2011: 10 part-time 2012: 22 part-time
MSc in Supply Chain Management	Dublin Institute of Technology	Level 9 (full-time 1 year/part-time up to 3 years)	2011/12: 45 full-time & 67 part-time (inc 19 Springboard) 2012/13: 50 full-time & 77 part-time	2011: 1 part-time 2012: No data
Supply Chain Management (Lean SCM Black Belt) Post Graduate Dip	University College Cork	Level 9 (18 months part-time) Plus another 6 months for the MComm	2011/12: 35 2012/13: 40 Full-time and 4 Springboard PT 2013/14: 53	2011: 4 part-time 2012: 7 part-time
Supply Chain Management MComm	University College Cork	Level 9 (additional 6 months part-time after completing Supply Chain Management)	2011/12: 11 part-time 2012/13: 9 part-time 2013/14: 20 part-time	2011: 11 part-time 2010: 10 part-time
Bachelor of Business (Honours) Supply Chain Management	Carlow Institute of Technology	Level 8 (4 years)	2011/12: 19 full-time and 9 Springboard PT 2012/13: 9 full-time 2013-14: 10 (of which 5 are Erasmus students) and 20 Springboard PT	2011 N/A 2012 13 FT
Bachelor of Science (Hons) Logistics and Supply Chain Management	Dublin Institute of Technology	Level 8 (4 years full-time)	2011/12: 147 full-time 2012/13 156 full-time	2011: 30 full-time 2012: 26 full-time



Course Title	Provider	NFQ Level/Duration	Enrolment Numbers	Graduate Numbers
Bachelor of Business Supply Chain and Transport Management	Cork Institute of Technology	Level 8 (1 year part-time)	2011/12: 21 part-time 2012/13: 37 part-time	2011: 50 part-time 2012: 16 part-time
Bachelor of Business Supply Chain Management	Carlow Institute of Technology	Level 7 (3 years duration)	2013-14: 20 (of which 13 are Erasmus students)	2012: 13 full-time
BSC (Transport Operations & Technology)	Dublin Institute of Technology	Level 8 (4 years full time)	N/A	N/A
BSC (Transport Management and Technology)	Cork Institute of Technology	3 years full time for Level 7 ordinary degree and additional 1 year for Level 8 honours degree	N/A	N/A
BEng Road Transport Technology & Management	Limerick Institute of Technology	Level 7 (3 years)	N/A	N/A
Supply Chain Management Cert /Dip	University College Cork (UCC)	Level 7 (2 years part-time) Students receive a Certificate after Year 1 and a Diploma after Year 2.	2011-12: 30 Certificate (inc 15 Springboard PT)& 10 Diploma 2012-13: 28 Certificate (inc 15 Springboard PT) & 18 Diploma (inc 6 Springboard PT) 2013-14: 28 Certificate (inc 9 Springboard PT) & 17 Diploma (including 8 Springboard PT)	2011: 1 part-time 2012: 7 part-time 2014 : Cert 7 (Springboard PT) Dip 6 (Springboard PT)
Bachelor of Business Supply Chain Management	Carlow Institute of Technology	Level 7 (3 years duration)	2013-14: 20 (of which 13 are Erasmus students)	2012: 13 full-time
Higher Diploma Business Supply Chain Management	Carlow Institute of Technology- Carlow and Wexford Campus	Level 8 Higher Diploma (part-time)	2011/12: 13 full-time 2012/13: 8 part-time 2013-14: 6 32 Springboard PT places available for academic year 2014/15	N/A 2012: 9 part-time
Diploma in Logistics Supervisory Management	Dundalk Institute of Technology	CPD Level 6 (18 months part time)	N/A	N/A

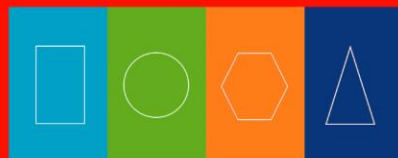
Course Title	Provider	NFQ Level/Duration	Enrolment Numbers	Graduate Numbers
Diploma in Supply Chain Management	University of Limerick	Level 8 (Springboard PT, 60 credits)	2012/13: 15 Springboard PT 2013/14: 11 Springboard PT	2013: 6 Springboard PT 2014: 4 Springboard PT
Specialist Diploma in supply Chain Management - Systems & Relationships	University of Limerick	Level 9 (Springboard PT ,60 credits)	2012/13: 8 Springboard PT	2013 : 4 Springboard
CPD diploma in Logistics and supply chain Management	Dublin Institute of Technology	Level 8 (Springboard PT , 40 credits)	2011/12 : 12 Springboard PT 2012/13: 10 Springboard PT 2013/14: 5 Springboard PT	2012: 10 Springboard PT 2013; NA 2014: 4 Springboard PT
Certificate in Production & Inventory Management	Institute of Technology Tallaght	2 years part-time APIC Certified	2011/12: 9 part-time 2012/13: 34 part-time	N/A
Certificate in Food Supply Chain Management	Dundalk Institute of Technology	Supplemental Certificate Level 8 Springboard (30 credits)	2011/12: 11 Springboard part-time 2012/13: 9 Springboard PT	2012 : 3 Springboard PT 2013: 2 Springboard PT
Certificate of attendance Logistics and Supply Chain Management	Athlone Institute of Technology	Certificate of attendance (part-time)	N/A	N/A

Source: Higher Education Authority

Table 2: Third level Institutions - Online/Distance Learning

Course Title	Provider	Level/Duration	Enrolment Numbers	Graduate Numbers
Bachelor of Science in Supply Chain Management	ULearning University of Limerick	Level 8 (4 years)	2011/12: 18 2012/13: 28	2011: 6 2012: 9
Supply Chain Management (Lean SCM Green Belt)	University College Cork (UCC)	3 - 6 months duration 15 Credits	2011-12: 16 2012-13: 24 2013-14: 17	N/A
Masters of Science in Supply Chain Operations	ULearning University of limerick	Level 9	Starts in September 2014	N/A

Source: Higher Education Authority



There are several professional body and private sector run courses. Many are proprietary accredited and are delivered part-time and online. Courses range from short 1 to 5 day delivery duration up to two years.

Table 3: Private Sector & Professional Body courses

Course Title	Provider	Level / Duration
Bachelor of Business, Procurement and Supply Chain Management	Irish Institute of Purchasing and Materials Management (IIPMM)	Level 7 (Springboard PT 60 credits)
Diploma in Logistics and Supply Chain Management	Communication and Management institute, Dublin	Award by Institute of Commercial Management, UK.
Diploma in Procurement and supply Chain Management	Communication and Management Institute, Dublin	Award by Chartered Institute of Procurement and Supply, UK
Diploma / Certificate in Warehouse operations	Communication and Management Institute, Dublin	Part-time/evening-six months
Certificate in Transport Distribution	Communication and Management Institute, Dublin	QQI Level 6 (component) part-time evening 3 months
Diploma in Logistics and Supply Chain Management	Chartered Institute of Logistics and Transport (CILT)	Two years blended learning - delivered through tutorials - accredited by CILT
Certificate in Logistics	Chartered Institute of Logistics and Transport (CILT)	Flexible learning programme (CD Rom) - accredited by CILT
Certificate of Professional Competence in Road Transport Operations Management	Chartered Institute of Logistics and Transport (CILT)	Accredited by CILT
Higher Certificate in Business, Procurement	Irish Institute of Purchasing & Materials Management (IIPMM)	Level 6 Springboard PT 35 credits 2011/12 : 28 Springboard PT
Bachelor of Business in Procurement and Supply Management	Irish Institute of Purchasing & Materials Management (IIPMM)	Level 7 (1 year part-time)
Bachelor of Business in Procurement and Supply Management	Irish Institute of Purchasing & Materials Management (IIPMM)	Level 8 (1 year part-time)
Certificate in Warehousing and Supply	Irish Institute of Purchasing & Materials Management (IIPMM)	Level 6 Springboard (4 months comprising 35 credits) 2011/12 : 28 Springboard PT
Good Distribution Practice (GDP)	Life Science Ireland - a division of the Irish Exporters Association (IEA)	Three modules comprising 5½ days
Irish International Freight Association	FIATA Diploma in Freight Forwarding - modules include freight forwarding, sea freight, airfreight, multimodal, customs, logistics, insurance, dangerous goods, and information technology.	10 months part-time/evening by e learning. Available to people currently employed in the freight forwarding and supply chain industry.

Course Title	Provider	Level / Duration
SAFED training - safe and fuel efficient driving	Freight Transport Association	Half-day
Certificate in Production and Inventory Management	Irish Supply Chain Management Institute	
Logistics for International Trade	Institute of International Trade of Ireland (an Irish Exporters Association Body)	4 days duration
Dangerous Goods Safety Advisor examination training	Institute of International Trade of Ireland (an IEA Body)	4 days duration
Export and Import Documentation	Institute of International Trade of Ireland (an IEA Body)	1 day duration
Warehouse Operations Management Diploma (online course)	Chartered Institute of Purchasing and Supply	UK Level 5 (equivalent to NFQ level 7)
Ports & Shipping Management Diploma (online course)	Chartered Institute of Purchasing and Supply	UK Level 5 (equivalent to NFQ level 7)
Procurement & Supply Diploma (online course)	Chartered Institute of Purchasing and Supply	UK level 4 (equivalent to NFQ level 6)
Understanding of the Commercial Shipping Sector	Institute of Chartered Shipbrokers	Foundation Diploma and Advanced Diploma
Irish Training and Education Centre	International Trade and Customs (distance learning) ITEC Diploma	
Diageo	Supply chain capability development programme - CPD example	
Drivers Hours & Working Time Directive Workshop for Managers/Supervisors	Freight Transport Association	1 day
Drivers Hours & Working Time Directive Workshop for Drivers	Freight Transport Association	Half-day
Certified Forklift Training	Warehouse Training Solutions, Dublin	

Source: EGFSN Secretariat

Table 4: Skillnets Provision - example

Warehouse & Inventory Management	Carlow Kilkenny Skillnet	7 days
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Source: Skillnets

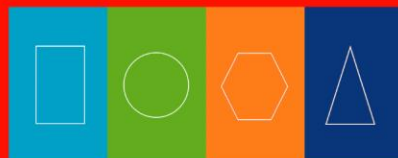
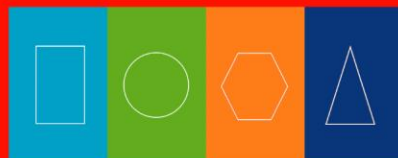


Table 5- SOLAS Information on Education & Training Board Provision - (mainly previous FÁS Training Centres provision).

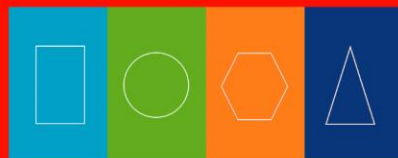
Title	Outline course content	Accreditation Level	Comments
CPC - Control of Vehicle & Eco-Driving Techniques <i>See note (a) below</i>	<ul style="list-style-type: none"> ▪ INDUCTION ▪ CONTROL OF VEHICLE & ECO-DRIVING TECHNIQUES 	RSA - DRIVER CPC Certificate of Attendance	<ul style="list-style-type: none"> ▪ Part time ▪ 8 hours duration ▪ Learners must complete five Driver CPC courses over a five year period <i>i.e. one day's training per year in order to achieve an RSA - Driver Certificate of Professional Competence</i>
CPC - Health and Safety for the Professional Driver <i>See note (a) below</i>	<ul style="list-style-type: none"> ▪ INDUCTION ▪ HEALTH AND SAFETY FOR THE PROFESSIONAL DRIVER 	RSA - DRIVER CPC Certificate of Attendance	<ul style="list-style-type: none"> ▪ Part time ▪ 8 hours ▪ Learners must complete five Driver CPC courses over a five year period as above.
CPC - Minimising Risks & Managing Emergencies <i>See note (a) below</i>	<ul style="list-style-type: none"> ▪ INDUCTION ▪ MINIMISING RISK & MANAGING EMERGENCIES 	RSA - DRIVER CPC Certificate of Attendance	<ul style="list-style-type: none"> ▪ Part time ▪ 8 hours ▪ Learners must complete five driver CPC courses over a five year period as above.
CPC - Professional Bus Driver <i>See note (a) below</i>	<ul style="list-style-type: none"> ▪ INDUCTION ▪ PROFESSIONAL BUS DRIVER 	RSA - DRIVER CPC Certificate of Attendance	<ul style="list-style-type: none"> ▪ Part time ▪ 8 hours ▪ Learners must complete five driver CPC courses over a five year period as above.
CPC - Professional Truck Driver <i>See note (a) below</i>	<ul style="list-style-type: none"> ▪ Induction ▪ PROFESSIONAL TRUCK DRIVER 	RSA - DRIVER CPC Certificate of Attendance	<ul style="list-style-type: none"> ▪ Part time ▪ 8 hours ▪ Learners must complete five driver CPC courses over a five year period as above.
CPC - Role of the Professional Driver <i>See Note (b) below</i>	<ul style="list-style-type: none"> ▪ INDUCTION ▪ ROLE OF THE PROFESSIONAL DRIVER 	RSA - DRIVER CPC Certificate of Attendance	<ul style="list-style-type: none"> ▪ Part time ▪ 8 hours ▪ Learners must complete five driver CPC courses over a five year period as above.

Title	Outline course content	Accreditation Level	Comments
Delivery Driver <i>See Note (c) below</i>	<ul style="list-style-type: none"> ▪ INDUCTION ▪ MANUAL HANDLING ▪ DRIVER THEORY FOR CLASSES ABMW ▪ DRIVER CLASS B - CAR AND LIGHT VAN PRACTICAL ▪ STEPS TO EXCELLENCE FOR PERSONAL SUCCESS ▪ DRIVER THEORY CLASS C - RIGID TRUCK AND ARTICULATED TRUCK (<i>optional</i>) ▪ DRIVER THEORY CLASS D - BUS (<i>Optional</i>) ▪ CAREER PLANNING AND JOB SEEKING SKILLS 	Department of Transport Certificate in Driving - Delivery Assessments in DRIVER THEORY TESTING SERVICE/DEPT OF TRANSPORT DEPT OF TRANSPORT (practical test light Class B car and light vans)	<ul style="list-style-type: none"> ▪ Full Time ▪ 9 weeks ▪ Learners who successfully complete assessed optional modules will receive: Driver Theory Test Certificate Class C Rigid Truck and Articulated Truck Driver Theory Test Certificate Class D - Bus
Heavy Goods Vehicle Driving (HGV) - Artic	<ul style="list-style-type: none"> ▪ INDUCTION (<i>Core</i>) ▪ MANUAL HANDLING (<i>Core</i>) ▪ DRIVING - H.G.V. ARTICULATED BODY (<i>Core</i>) ▪ CAREER PLANNING AND JOB SEEKING SKILLS (<i>Core</i>) ▪ DRIVER CPC TRAINING (<i>Core</i>) ▪ IN-COMPANY (<i>Optional</i>) 	RSA <ul style="list-style-type: none"> ▪ Driving License Class EC ▪ Certificate of Professional Competence CPC Learners who do not achieve the overall award will be eligible for individual certificates for the certifiable modules that have been successfully completed, where appropriate	<ul style="list-style-type: none"> ▪ Fulltime ▪ 7 Weeks Training providers must be RSA approved to deliver all DRIVER CPC modules. Tutors delivering any DRIVER CPC module or modules must be RSA approved for the module/s they intend to deliver.



Title	Outline course content	Accreditation Level	Comments
Heavy Goods Vehicle Driving (HGV) - Rigid	<ul style="list-style-type: none"> ▪ INDUCTION (Core) ▪ MANUAL HANDLING (Core) ▪ DRIVING - H.G.V. Rigid BODY (Core) ▪ CAREER PLANNING AND JOB SEEKING SKILLS (Core) ▪ ADR DRIVER TRAINING (Dangerous Goods) (Core) ▪ FORK LIFT TRUCK DRIVING (Core) ▪ DRIVER CPC TRAINING (Core) ▪ IN-COMPANY (Optional) ▪ Safepass (Optional) 	<p>Upon successful completion of this course, the learner will receive a:</p> <p>The Department of Environment Class C Driving Licence RSA - Driver Certificate of Professional Competence (CPC)</p> <p>Learners who successfully complete the following assessed modules will receive:</p> <p>For the Fork truck driving - FETAC Minor Counterbalance Fork Lift Truck Driving OR Reach Fork Lift Truck Driving</p> <p>For ADR Driver Training Certification for Drivers of Vehicle</p>	<p>This course has been designed to provide business with personnel who are skilled as Class C licensed drivers of Heavy Goods Vehicles with Rigid Bodies and DRIVER CPC Certification. (DRIVER CPC - Driver Certificate of Professional Competence.</p> <ul style="list-style-type: none"> ▪ Full Time ▪ 10 weeks <p>Driving Lessons: Each learner must receive a minimum 25 hours HGV Rigid driving lessons.</p> <p>ADR Driver Training: The ADR Driver Training module must be trained by an approved ADR Driver Training Course as approved by the Health and Safety Authority.</p> <p>The ADR Driver Training Module is of a 1 week duration which will consist of the following: 3 Days: Initial Basic Driver Training Certificate 2 Days: Initial Basic and Tanker Specialisation Driver Training Certificate</p> <p>Forklift Truck Driving: Both Reach and Counterbalance Forklift operation training and assessments (025 & 026) to be delivered.</p> <p>Driver CPC Training: Training providers must be RSA approved to deliver all DRIVER CPC modules. Tutors delivering any DRIVER CPC module or modules must be RSA approved for the module(s) they intend to deliver.</p>

Title	Outline course content	Accreditation Level	Comments
Introduction to Stores Management - Evenings	<ul style="list-style-type: none"> ▪ INTRODUCTION TO THE STORES FUNCTION ▪ THE STORES RESPONSIBILITY ▪ CUSTOMER SERVICE ▪ INTRODUCTION TO STOCK MANAGEMENT ▪ THE MANAGEMENT OF THE STORES OPERATION ▪ STORES ACCOUNTABILITY ▪ PHYSICAL MANAGEMENT OF STOCK ▪ INTRODUCTION TO INFORMATION AND RECORDING SYSTEMS ▪ INTRODUCTION TO MATERIALS HANDLING ▪ CONTROL OF STORAGE SYSTEMS 	No assessment	<ul style="list-style-type: none"> ▪ Evenings ▪ 30 hours (3 hours x 10 evenings)
Logistics and Distribution -	<ul style="list-style-type: none"> ▪ INDUCTION - COMMON AWARDS (core) ▪ WAREHOUSING (core) ▪ INVENTORY CONTROL (core) ▪ PURCHASING (core) ▪ FREIGHT FORWARDING (core) <p><u>PLUS any two of the following modules</u></p> <ul style="list-style-type: none"> ▪ COMMUNICATIONS ▪ PERSONAL EFFECTIVENESS ▪ CUSTOMER SERVICE ▪ TEAMWORKING <p><u>PLUS any two of the following modules</u></p> <ul style="list-style-type: none"> ▪ WORD PROCESSING ▪ SPREADSHEET METHODS ▪ DATABASE METHODS ▪ THE INTERNET ▪ DESKTOP PUBLISHING ▪ CAREER PLANNING AND WORK EXPERIENCE 	<p>Upon successful completion of this course, the learner will receive a: FETAC Level 5 Major Award in Logistics and Distribution (5M2767)</p> <p>CAREER PLANNING AND WORK EXPERIENCE The Career Planning and Work Experience module includes 2 weeks of on the job work experience.</p>	<p>The aim of this programme is to enable the learner to acquire the knowledge, skill and competence to work independently and under supervision, managing inventory, ordering and receiving goods and supporting a freight forwarding service in a range of logistics and distribution environments and contexts.</p> <ul style="list-style-type: none"> ▪ Full Time ▪ 39 Weeks
LOGISTICS AND DISTRIBUTION (FIT)	As above	As above	Programme developed in conjunction with FIT and aimed at FIT sourced clients

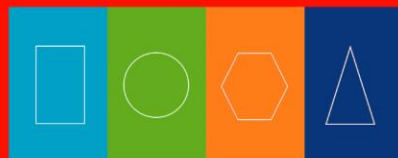


Title	Outline course content	Accreditation Level	Comments
SUPPLY CHAIN LOGISTICS	All modules are core modules <ul style="list-style-type: none"> ▪ INDUCTION ▪ BUSINESS AND FINANCE MANAGEMENT ▪ SUPPLY CHAIN ENVIRONMENT MANAGEMENT ▪ PURCHASING AND PROCUREMENT ▪ TRANSPORT AND DISTRIBUTION ▪ WAREHOUSING AND INVENTORY MANAGEMENT ▪ PERSONAL AND PROFESSIONAL DEVELOPMENT ▪ TEAM LEADERSHIP ▪ WORK PRACTICE - SUPPLY CHAIN LOGISTICS ▪ CAREER PLANNING & JOB SEEKING SKILLS 	Upon successful completion of this course, the learner will receive a: FETAC Level 6 Major Award in Supply Chain Logistics 6M2192.	The aim of the programme is to enable the learner to develop the knowledge, skill and competencies to plan and manage the provision of effective and efficient supply chain services to include; strategic planning and decision making, inventory management, warehouse design, managing the transportation and distribution of goods <ul style="list-style-type: none"> ▪ Full Time ▪ 48 Weeks
Forklift Counter Balance (Evening)	<ul style="list-style-type: none"> ▪ Induction ▪ COUNTERBALANCE FORKLIFT TRUCK SKILLS 	Upon successful completion of this course, the learner will receive a: FETAC Level 5 Component Certificate in Reach Forklift Truck Skills 5N5832 And/Or FETAC Level 5 Component Certificate in Counterbalance Forklift Truck Skills 5N5831	To provide participants with the skills and related knowledge to use a Counter Balance Fork Lift Truck safely and with confidence 30 hours (3 hours x 10 evenings)

<i>Title</i>	<i>Outline course content</i>	<i>Accreditation Level</i>	<i>Comments</i>
Forklift Truck Operator (Novice) Short Course	<ul style="list-style-type: none"> ▪ Induction ▪ FORK TRUCK COUNTERBALANCE ▪ FORK TRUCK REACH 	<p>This course will lead to an Award in either Counterbalance and/or Reach Truck Driving. This will depend on which of these modules is delivered.</p> <p>Where both Counterbalance and Reach Fork Truck driving are being offered as part of the same course, a further 2 days/ 12.5 hours are required to deliver and assess the second fork truck module.</p> <p>Upon successful completion of this course, the learner will receive a: FETAC Level 5 Component Certificate in Reach Fork Lift Truck Skills and/or FETAC Level 5 Component Certificate in Counterbalance Fork Lift Truck Skills</p>	<p>The aim of the course is to provide the participants with the skills, knowledge and competencies to operate a Reach or Counterbalance Fork Truck, safely and efficiently in accordance with the Manufacturers Guidelines and the Code of Practice for Fork Truck Operators, as laid down in the 2005 Health Safety and Welfare at Work Act.</p> <ul style="list-style-type: none"> ▪ Full time ▪ 2.5 Weeks
Forklift Truck Operator (Novice) Evening	<ul style="list-style-type: none"> ▪ Induction ▪ FORK TRUCK COUNTERBALANCE ▪ FORK TRUCK REACH 	<p>Upon successful completion of this course, the learner will receive a: FETAC Level 5 Component Certificate in Reach Fork Lift Truck Skills</p> <p>and/or</p> <p>FETAC Level 5 Component Certificate in Counterbalance Fork Lift Truck Skills</p>	<p>The aim of the course is to provide the participants with the skills, knowledge and competencies to operate a Reach or Counterbalance Fork Truck, safely and efficiently in accordance with the Manufacturers Guidelines and the Code of Practice for Fork Truck Operators, as laid down in the 2005 Health Safety and Welfare at Work Act.</p> <p>30 hours (3 hours x 10 evenings)</p>

Source: SOLAS

Note (a): CPC - The aim of DRIVER CPC training is to provide the learner who wishes to maintain their CPC qualification with the knowledge, skills and competencies to confirm and expand on their existing knowledge and skills as a bus/truck driver etc., thus ensuring that as a professional driver they will continue to be safe, courteous and fuel efficient road users.



Note (b) the aim of DRIVER CPC training is to provide the learner who wishes to maintain their CPC qualification with the knowledge, skills and competencies to help enhance the image of the profession and understand the social environment of transport and the regulations governing it.

Note (c) - The aim of this program is to provide long-term unemployed people with the opportunity to develop the skills, knowledge and attitudes which will enable them to:-

- Achieve personal and work related goals
- Drive a car/light van in a safe manner and in accordance with the Road
- Traffic Acts
- Obtain employment as Delivery Drivers in the Transport Industry.

Additional Information regarding Momentum Courses on offer for long term unemployed 2014

The Momentum programme provides free education and training for long -term unemployed job-seekers. It includes on-the-job training as well as accreditation for education and training. One third of all places are ring fenced for those under 25 years. The following is a breakdown of FTDL and Transport related Momentum places announced in September 2014.

FTDL Relevant Momentum Courses on offer for long term unemployed 2014

Title	Allocation
Export & Transport Manager	72
Warehousing & Transport Manager	72
Fuel Efficient Truck Driver	72
Warehouse & Logistics In Ireland	271
Looking Forward 2 (Warehousing & Logistics)	297
Distribution & Logistics Careers	230
Fuel Efficient Coach / Bus Driver	72
Coach Driver (With Guiding)	72
Total	1,158

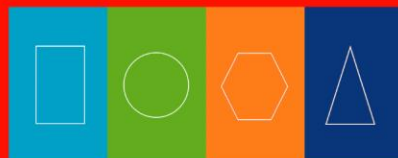
Source: SOLAS

A total of 282 places in Warehousing and logistics were approved under the SOLAS funded Momentum programme for the long term unemployed in September 2014.

Examples of relevant Education & Training Board Provision

Course title	Provider	NFQ Level	No.s of participants
Warehouse data base management	Fasttrack to IT Initiative- Pearse College of Further Education	QQI level 5	N/A
Business Procurement & Supply Chain Mgt	Colaiste Ide - College of Further Education, Dublin	QQI Level 6 Certificate	N/A
Warehousing Skills	Cork Education & Training Board (CETB)		N/A
Logistics & Distribution, incl Fork Truck Operation	Limerick and Clare Education and Training Board (LCETB)	QQI Level 5 Major	16 full-time currently running
Heavy Goods Vehicle Rigid	LCETB: Limerick City	DOE C Licence + RSA CPC	8 full-time
Heavy Goods Vehicle Rigid	LCETB : Shannon, Co Clare	DOE C Licence + RSA CPC	8 full-time
Heavy Goods Vehicle Rigid	LCETB: Thurles, Co Limerick	DOE C Licence + RSA CPC	8 full-time
Heavy Goods Vehicle Rigid	LCETB: Shannon, Co Clare	DOE C Licence + RSA CPC	8 full-time planned
Logistics & Distribution inc Fork Truck Operation	LCETB: Shannon, Co Clare	QQI Level 5 Major	20 full-time planned
Forktruck Operator	LCETB: Limerick City	QQI Level 5 Component	30 full-time planned
Forktruck Operator	LCETB: Shannon	QQI Level 5 Component	24 full-time planned
Logistics & Distribution, Operation	LCETB: Limerick City	QQI Level 5 Major Award	20 full-time planned
Logistics and Distribution Traineeship	CETB -in Michlestown	QQI Level 5 major Award	Full-time 9 months
Heavy Goods Vehicle Rigid	CETB	DOE C Licence + RSA CPC	Full-time 15 weeks duration

Source: EGFSN Secretariat



Appendix E: Glossary of Acronyms

Acronym	Description
3PL's	Third Party Logistics Providers
AEO	Authorised Economic Operator
BAPW	British Association of Pharmaceutical Wholesalers
CILT	Chartered Institute of Logistics and Transport
CIPS	Chartered Institute of Purchasing and Supply
COI-SCM	Centre of Innovation for Supply Chain Management
CPC	Certificate of Professional Competence
CSO	Central Statistics Office
EGFSN	Expert Group on Future Skills Needs
ESRI	Economic and Social Research Institute
ETB	Education and Training Boards
FET	Further Education and Training
FIATA	Federation Internationale des Associations de Transitaires et Assimiles
FTDL	Freight Transport, Distribution and Logistics
GDP	Good Distribution Practices
HEA	Higher Education Authority
HGV	Heavy Good Vehicle
HPRA	Health Products Regulatory Authority
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IDA	Industrial Development Agency
IEA	Irish Exporters Association
IIFA	Irish International Freight Association
IIPMM	Irish Institute of Purchasing & Materials Management
IoT	Institute of Technology
IRHA	Irish Road Haulage Association
NCCA	National Council for Curriculum and Assessment
NFQ	National Framework of Qualifications
NMC	National Maritime College of Ireland
RSA	Road Safety Authority

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