



Guidance for Higher Education providers on current and future skills needs of enterprise

Springboard 2013



Table of Contents

1. Introduction	2
2. Skills Requirements of the Manufacturing Sector to 2020	5
3. Skills for Enterprise to Trade Internationally	9
4. High-Level ICT Skills Recruitment Needs	14
5. Skills for the International Financial Services Sector	16
6. Cross Enterprise Skills Needs.....	17
7. Current Skills in Demand by Occupation	20
8. Current Demand as Measured by Advertised Vacancies	23
9. Future Skills Needs - Job Announcements	29



1. Introduction

The following is a summary of current and future skills needs of enterprises identified in reports of the Expert Group on Future Skills Needs (EGFSN)/Forfás, which provides guidance for those tendering for funding for higher education places for job seekers as part of the Springboard 2013 call. The acquisition of these skills will help to improve the employment prospects of jobseekers.

Skills for the Manufacturing Sector

There is an emphasis this year on skills in the manufacturing sector in Ireland. The Government's Action Plan for Jobs 2012 focused on addressing challenges facing the sector in Ireland and targeted specific actions in support of the sector. In response to the action on skills, the EGFSN/Forfás, in 2012, assessed the skills and competencies needed by the sector and these are analysed in the report *Future Skills Requirements of the Manufacturing Sector to 2020*. This research addresses skills requirements within six sub-sectors of manufacturing. It updates and reinforces, where still relevant, research from the EGFSN/Forfás sectoral reports on Medical Devices (2008), Bio-Pharma/Pharma-chem (2010), Food and Beverages (2009) and the Green Economy (2010) and then focuses in detail on the ICT hardware, Engineering and Consumer Products sectors, these later three sectors not having not been addressed in previous work.

Skills required for Exporting

Given the importance of exports to future growth and economic recovery, there is also a particular focus on the key skills required for exporting companies (both multinational and SMEs/ foreign owned and indigenous) across sectors. Research undertaken with exporters during 2011/2012 underpins the report of the Expert Group on Future Skills Needs/Forfás on *Key Skills for Enterprise to Trade Internationally, June 2012*. The research focuses on the skills capabilities of enterprises to enable them to successfully compete in the key markets and for sectoral opportunities as identified in the Government's *Strategy and Action Plan for Trade, Tourism and Investment to 2015*.

ICT Skills across all sectors

Addressing the high-level ICT skills demand across all sectors of the economy remains a top priority. The demand for ICT skills remains strong based on recent job creation announcements by both MNCs and indigenous companies in areas such as cloud computing, network security, localisation and testing, telecommunications and research & development. Projects specifically in the area of data analytics require a combination of technical and business skills to both generate business intelligence and to take action based on the insights generated. Many of the skilled professionals operating in data analytics have qualified under general programmes in areas such as mathematics, statistics and IT, however there is a need for some specific programmes in Data Analytics.

Skills for the International Financial Service Sector

Some of the skills needs identified in the EGFSN/Forfás report *Future Skills and Research Needs of the International Financial Services Industry*, are still relevant, as confirmed in the annual EGFSN *National Skills Bulletin*. The ICT skills areas of demand are also relevant to the International



Financial Services sector. In this context, measures to address ICT skills needs, including data analytics, similarly apply to the Financial Services sector, as well as the specific financial skills in demand described in these guidelines.

Cross Enterprise Skills

A number of areas of skills demand have emerged in EGFSN reports that are apparent across sectors, including: the need to improve management skills; skills for creativity, innovation and design; entrepreneurial (intrapreneurial) competencies; improving generic skills such as oral and written communications and team working. The objective is not to address these skills separately but to embed them within programmes so that they can be practically applied and developed.

Current Skills Shortages at Occupational Level

Current skills shortages are identified at occupational level in the 2012 *EGFSN National Skills Bulletin*. A skills shortage refers to a situation where there is an insufficient number of individuals with the required qualifications, skills set and/or experience to fill particular posts. They are primarily confined to ICT occupations and highly specialised posts (e.g. chemists, specialist engineers) in high-tech manufacturing, Finance (regulatory compliance, quant. finance), sales (contact centre roles with languages, digital marketing) and clerical (multilingual accounts). Specific skills mix are often sought, e.g. cross-disciplinary skills spanning a variety of areas. The magnitude of shortages is low (in the order of several hundred, with the exception of ICT).

Current Demand as Measured by Advertised Vacancies

The EGFSN *Vacancy Overview 2012* provides an overview of the demand for labour as measured by trends identified in advertised job vacancies. The vacancy data refers to over 100,000 newly advertised posts on Jobs Ireland (DSP/FÁS) and IrishJobs.ie. It reports on the occupations and job titles of vacancies advertised in 2012 with the objective of identifying skills for which there is currently a demand in the Irish labour market. Each month on average approximately 5,500 vacancies are notified by employers to Jobs Ireland and notifications to IrishJobs.ie averaged 2,500. Given that employment contracted between 2011 and 2012 for all occupations except for managers, professionals and associate professionals, there was little expansion demand suggesting that most of the vacancies arising were due to turnover and/or replacement.

Job Announcements in 2012 - Future Demand

Job announcements in the media in 2012 are an indicator of future demand. They indicate a particular requirement for IT professionals and sales related occupations. Expansion demand was most pronounced for the IT sector followed by the medical devices and pharmaceutical sectors.

The optimal labour market outcomes for participants under Springboard 2013 will be delivered by:

- Ensuring programmes are **relevant to enterprise skills needs** as identified by the EGFSN/Forfás, in conjunction with companies or through identifying a local or sectoral need.



- Ensuring there is **appropriate screening of candidates**, e.g.
 - that candidates are of sufficient calibre to manage the demands of the course or
 - that candidates with significant previous experience in the sector could proceed by advanced entry to programmes (recognition of prior learning) or
 - where specific skills gaps can only be addressed by upskilling individuals who have previous substantial work experience in the sector
 - Interest of the learner in the course is paramount.

In each case, the objective is that the jobseeker will benefit through relevant specialism in addition to their existing qualifications and experience, making them more employable.

- Programmes should ideally seek to offer a **structured work placement** focussed on enhancing the **employability** of the graduate particularly with regard to enterprise/generic skills.
- Where less than full awards are proposed, modules should focus on specific skills requirements, **in collaboration with enterprises/** trade associations and aimed at a highly targeted cohort.
- Where possible aspects of employment readiness should be embedded in the programmes to facilitate those who have acquired the technical skills for jobs meet the **interviewing and CV preparedness** necessary for progression to employment.

Key areas of Focus for Springboard 2013

- Mechanical/Manufacturing engineers - Automation, Development & Design (250 places, NFO Level 8)
- Validation, Quality, Polymer, Supply Chain & Automation engineers (200 places, NFO level 9)
- Polymers/plastics technicians (place numbers to be decided with industry)
- Customer Sales/Service Support with Foreign Languages (800 places, NFO Levels 6/7) (Specifically German, French, Spanish, Italian and Dutch)
- International Sales Professionals - with foreign languages (250 places, NFO Levels 6/7/8) (Specifically German, French, Polish and Russian)
- International Project Management (NFO Levels 7/8) - 100 places
- Foreign Language Proficiency/Cultural Awareness for management positions (conversational German, French, Dutch, Swedish and Norwegian at Levels B1, B2 & C1 on the CEFR)
- Process innovation and product development for the funds industry and accountants with experience for financial services
- Regulation and Compliance for financial services
- Financial services Project management (e.g. PRINCE2 or PMI Certification)
- Major awards at NFO Levels 6 & 7 in ICT providing progression opportunities to full NFO Level 8 awards in computing/electronic engineering to complement the ICT Level 8 Conversion programmes underway. The Level 6 & 7 programmes should have an identified enterprise partner or local need and include a work placement component.
- Business analysts for all sectors with skills to be effective consumers of big data insights
- Commercialisation of Product/Service Design (NFO Level 7/8)
- E-commerce marketing, sales and purchasing for SME online trading across all sectors.



2. Skills Requirements of the Manufacturing Sector to 2020

EGFSN/Forfás Report: Future Skills Requirements of the Manufacturing Sector to 2020

Skills recruitment difficulties being experienced mainly relate to:

- Polymers/plastics technicians
- Mechanical/Manufacturing engineers -Automation, Development & Design (250 places at Level 8)
- Validation, Quality, Polymer, Supply Chain & Automation engineers (200 places at Level 9)
- Mechanical engineers with knowledge of data analytics
- Project management skills and change management skills
- Technical sales skills
- Engineers with foreign languages

Link to

report: <http://www.egfsn.ie/publication/egfsnSearch.jsp?ft=/publications/2013/title,10363,en.php>

There is a challenge for manufacturing enterprises in attracting the top graduate talent as many graduates are sought after for other sectors. Future employment scenarios for the manufacturing sector are highly dependent on both improvements in domestic competitiveness and a favourable international environment for trade. Replacement demand for the sector is estimated in the region of 4,000 to 5,000 per annum regardless of whether employment expands or not and there are upskilling requirements at both occupational and qualifications level.

Manufacturing firms across all sub-sectors reported that professional engineering and science occupations, as outlined overleaf, were the most frequently mentioned as being difficult to fill.

There is a demand in the short term for approximately 250 mechanical engineers with skills related to automation, development and design until increased enrolments in mainstream engineering programmes result in increased supply in 2-3 year's time.

In addition, it is recommended that Springboard provide up to 200 places on taught postgraduate courses specifically to address critical shortages across a number of engineering disciplines including validation, polymer, quality, automation and supply chain engineering.

Current skills in demand were identified for polymer technicians and Springboard should provide courses with the content and numbers to be decided in consultation with the relevant trade associations (such as IMDA, Plastics Ireland) and companies.



Identified Skills Demand within the Manufacturing Sector

Software	<ul style="list-style-type: none"> Medical devices - software quality assurance, software skills to manage the interface of IT systems with factory systems, software engineers for writing control software for automation equipment, & for product development. ICT hardware sector - operating system design & development, user interface development and developing hardware products with greater functionality.
Polymers/plastics	<ul style="list-style-type: none"> Polymer expertise is a specific skill shortage across a number of sectors - plastics/polymer sector, medical devices, engineering and consumer sectors. The demand is at both technician and at engineer level.
Automation	<ul style="list-style-type: none"> Control theory and programming, robotics and vision system applications in relation to medical devices, ICT hardware and engineering sectors. Automation skills at technician level and at engineer level. Additional specialisms required for those from mechanical or software engineering disciplines or through specialist qualifications at NFQ Level 7 or 8 programmes in Mechatronics or specialist masters in mechanical engineering with automation modules.
Lean manufacturing	<ul style="list-style-type: none"> Benchmarking lean manufacturing skills.
Data Analysis	<ul style="list-style-type: none"> Skills to analyse and interpret data produced in manufacturing from controllers, shop floor data capture and quality systems. Bio-analytics in the Biopharma-Pharma-chemicals sector is a skillset increasingly required by engineers and scientists working in manufacturing.
Enterprise Skills	<ul style="list-style-type: none"> Managing Change - project management & change management skills including the ability to engage/motivate people to embrace and work with change in the sector. Technical sales skills which combine technical product knowledge with commercial ability and people skills to engage with customers, understand their needs, propose solutions and build on the relationship for further sales. European languages, especially conversational German in the context of engineering cos. skills gaps for business development in Europe.

Sector Specific Skills Gaps

<i>Sector</i>	<i>Skills Gaps</i>
Food and Beverages	<ul style="list-style-type: none"> Production/supervisory management & upskilling operatives & supervisory level staff. Sales/marketing & languages for developing business in the UK, Europe & the Far East. <p>Link to report: http://www.egfsn.ie/publication/egfsnSearch.jsp?ft=/publications/2009/title,5016,en.php</p>
ICT Hardware	<ul style="list-style-type: none"> Skills in control theory, robotics and vision system applications at both engineer and technician level to support automation. Specialised engineering skills including electronic engineers with materials and test experience; radio frequency engineers, (e.g. electronic engineers with a Masters in RF), & specialised engineering skills - wet etch skills for semiconductor manufacture. Data analytics to analyse and interpret large volumes of data. Process experts, such as production engineers who also have data analytic skills.



	<ul style="list-style-type: none"> Engineers with languages for developing and expanding sales. The foreign language mentioned most frequently for use within Europe was German.
Pharma-chemicals	<ul style="list-style-type: none"> Chemistry skills including analytical chemistry, organic chemistry, crystallisation and formulation and also pharmacology. Advanced, in-process, analytical techniques for continuous processing. Biotechnology skills for bioprocessing with a focus on formulation, cell culture, stem cell research and vaccine development. Bio-analytics and bioinformatics. Compliance/regulatory affairs skills to include postgraduate modules /CPD courses. Technical compliance expertise combined with leadership and influencing skills. Cross-disciplinary - green technologies including lean manufacturing; business and management skills, generic/soft skills (e.g. problem solving); IT systems. Strategic export business planning, sales, marketing and related skills. Postgraduate level programmes in 'Transition Skills' for process development e.g. to enable engineers to become familiar with chemistry; or chemists to become more familiar with engineering. Business modules embedded in STEM programmes focussed on Legal, Tax and Finance Skills; Leadership and Entrepreneurship; Team working, Communications, Creativity; Problem Solving; Project Management; Lean Technologies and Six Sigma; Sales Marketing and Business Development; Intellectual Property Management and IT.
Medical Devices	<ul style="list-style-type: none"> The skills to drive operational excellence which include skills in managing technology, change, strategy, cost control and leadership. Supervisory soft skills, especially people engagement skills. Product assurance skills including software and validation skills for software quality assurance, change approval, risk assessment and failure mode analysis. Quality engineers in the medical devices industry for quality assurance, interaction with internal corporate quality auditors and regulatory affairs. Software engineers for development of ICT enabled medical devices, as the addition of intelligent systems to medical devices has led to a demand for software design skills on product development teams in the convergence of technologies. Polymer technicians and engineers at Level 7 and Level 8. For the design of plastic components which account for a substantial part of all medical device production in Ireland, both in subcontractors and in medical device companies. Mechanical engineers with high honours Bachelor degrees. Automation engineering skills with a particular focus on robotics and machine vision.



Engineering	<ul style="list-style-type: none">▪ Specialised technical skills included: engineers with materials expertise for new product design and testing in metals area; automation skills in robotics to increase throughput; and polymer technicians and engineers for plastics manufacturers.▪ Technical procurement skills, e.g. engineers with commercial knowledge who work with suppliers and can negotiate supply terms.▪ Technical sales people.▪ Engineers with European languages for technical selling, and for other customer-facing commercial and engineering roles.
Consumer Goods	<ul style="list-style-type: none">▪ Commercial and people related skills.▪ Supervisory skills, production planning, Material Requirements Planning (MRP), supply chain management, sales and marketing skills and R&D skills, required to differentiate products by adding new product features and to win new businesses.▪ Design and manufacturing engineers to improve component design for manufacture and to deliver flexible automation solutions.



3. Skills for Enterprise to Trade Internationally

EGFSN Report: Key Skills for Enterprise to Trade Internationally (June 2012)

The skills and competencies required by enterprise to drive trade and export performance are:

- Global & International Management Skills
- International Sales Skills
- International Marketing Skills
- Channel Marketing Skills - Identification/Support and Management
- Fulfilment - Distribution & Installation Skills
- Customer Service/Support Skills
- Product/Service Design Skills
- Foreign Language Proficiency/Cultural Awareness

Link to report: <http://www.egfsn.ie/publications/featuredpublications/title,9402,en.php>

The study has identified 2,200 potential job opportunities arising within exporting companies which could be filled through tailored skills conversion programmes, developed in partnership with industry, in the areas of customer sales & service support with foreign languages, international sales with foreign languages, ICT computing¹, design engineering and project management. Potential candidates for these programmes should have relevant qualifications and experience in a related discipline, including those that require a 'topping' up qualification, and have an aptitude for the role. The Springboard call should provide courses as follows to the scale identified:

- Customer Sales/Service Support with Foreign Languages (NFQ Levels 6/7) - 800 places. (Specifically German, French, Spanish, Italian and Dutch).
- International Sales Professionals - with foreign languages (NFQ Levels 6/7/8) - 250 places. (Specifically German, French, Polish and Russian).
- International Project Management (NFQ Levels 7/8) - 100 places.

Sales, marketing, foreign language and soft skills are the main skills identified as needed to drive trading and export market performance in the years ahead. Foreign language skills that are in demand include European languages (German, French, Spanish, Italian, Portuguese) and Chinese.

Key future skills needs by function within the companies are:

- International sales skills with inter-culture competencies, effective communications, networking, knowledge of logistics and competencies such as tenacity and ability to work on own initiative

¹ The 800 computing software roles included here are being addressed in the second call for the ICT NFQ Level 8 Conversion programme announced in Feb 2013.



- Channel Management needs skills in selection, support of channel partner and managing a network of agents
- Marketing requires e-commerce and social media skills
- Customer service need order administration
- Management skill requirements include strategy, effective communications

Much of the sales education and training that is provided relates to business to consumer and often fast moving consumer goods. This overlooks the skills required for business to business and business to government selling and international selling. Elements of the Enterprise Ireland International Selling Programme and the Enterprise Ireland Excel at Exporting workshop series should be more widely available to learners. There is need to address sales in a modular way in business courses and thereby giving an option to students to focus on sales and to provide a postgraduate qualification on sales (with special reference to international sales) for graduates from technical disciplines and business graduates. Customer awareness training and overall ethos of client focus needs to be developed across business courses.

Foreign language skills and cultural awareness are complementary to other skills such as business, science, engineering and technology. Jobseekers with these combined skills are in increasing demand by employers. European languages will continue to be important, especially in the ICT, Life Sciences, Engineering, Cleantech and Food sectors. Internships overseas in countries where English is not the first language are highly useful to develop foreign language proficiency and cultural awareness.

Given its focus, Springboard can have a direct impact on international selling courses and on developing proficiency in foreign languages, primarily European languages (French, German, Spanish, Italian) to a business proficiency level (Levels B1, B2 & C1 on the six level Common European Framework of Reference for Languages for grading an individual's language proficiency).



The following table provides an overview of the key skills and competences required by the exporting companies surveyed across sectors by main business function areas. This is further broken down by professional, technical, organisation and soft skill requirements.

Key Business Functions	Professional Skills	Technical Skills	Organisational Skills	Soft Skills
Management	<ul style="list-style-type: none"> ▪ Global Management (foreign affiliates) ▪ International Management (SMEs) ▪ Strategic Export Business Planning ▪ Project Management ▪ Product Management ▪ Foreign Languages & Cultural Awareness 	<ul style="list-style-type: none"> ▪ Selection and Management of Channel Partners ▪ Knowledge of international legal /Contract/IP issues ▪ Lean Manufacturing ▪ Quality Assurance ▪ /Cost Control ▪ International Financial Management/ Risk 	<ul style="list-style-type: none"> ▪ Strategic Thinking ▪ Building Partnership/ Suppliers/ Strategic Alliances ▪ Networking ▪ Relationship Building ▪ Negotiation Skills 	<ul style="list-style-type: none"> ▪ Entrepreneurial Skills ▪ Emotional Intelligence ▪ Analytical Skills ▪ Customer Focus ▪ Communication Skills ▪ Teamwork ▪ Creative Problem - Solving
International Marketing & Sales	<ul style="list-style-type: none"> ▪ Market Research ▪ International Sales ▪ Business to Business, ▪ Business to Government, ▪ Business to Consumer ▪ Account Management ▪ Foreign Languages & Cultural Awareness 	<ul style="list-style-type: none"> ▪ Target Market knowledge ▪ Product/ Services technical know ▪ Design of written and web material for target markets ▪ E-commerce Skills ▪ Social Media Skills 	<ul style="list-style-type: none"> ▪ Sales Team support for Channel Partner ▪ Negotiation Skills ▪ Networking ▪ Relationship Building 	<ul style="list-style-type: none"> ▪ Customer Focus ▪ Entrepreneurship ▪ Commercial Awareness ▪ Emotional Intelligence ▪ Initiative ▪ Teamwork ▪ Communications
Fulfilment - Distribution & Installation	<ul style="list-style-type: none"> ▪ Foreign Languages & Cultural awareness ▪ Knowledge of Sector & Market Regulations/ ▪ Customs especially for BRICS countries ▪ Supply Chain Management 	<ul style="list-style-type: none"> ▪ International logistical/skills (air/sea/rail/ road/ online) ▪ Export credit insurance ▪ Engineering Skills (automation & industrial design) 	<ul style="list-style-type: none"> ▪ Relationship Building ▪ Customer/ Client Focus Ethos ▪ Networking ▪ Negotiation Skills 	<ul style="list-style-type: none"> ▪ Commercial Awareness ▪ Teamwork ▪ Presentation Skills ▪ Communication ▪ Analytical and Numerical Skills



Customer Service / Support	<ul style="list-style-type: none"> Customer Service/ Sales Skills Foreign Languages & Cultural Awareness 	<ul style="list-style-type: none"> Technical knowledge of Products/ Services Order administration 	<ul style="list-style-type: none"> Relationship Building Customer/ Client Focus Ethos 	<ul style="list-style-type: none"> Communication Skills (oral and written)-person to person and online
Product / Service Development & Design	<ul style="list-style-type: none"> Design & Innovation Skills Foreign Languages & Cultural Awareness Commercial Awareness 	<ul style="list-style-type: none"> Awareness of customer needs in different markets Knowledge of international Design Standards and Codes 	<ul style="list-style-type: none"> Relationship Building Customer/ Client Focus Ethos 	<ul style="list-style-type: none"> Creative Problem Solving Teamwork Presentation Skills Communication Skills

Sectoral Skills Needs

The following table provides a concise overview of the main skills requirements for each sector included within the scope of the report.

ICT	<ul style="list-style-type: none"> Sales support staff with problem solving and interpersonal skills. Sales skills for business to business selling and business to Government selling. Sales staff with language and cultural awareness. Managers with competencies in strategic export business planning, export sales planning, strategy, target market identification. Key account management and channel management for international distribution. Customer service engineers with linguistic and good communication skills Implementers & Documenters with Dutch/German - Junior Testers. Technical staff with good technical writing skills. QA testing (automated testing). Web Developers Technical graduates with good written and oral communication skills. Software Engineers and Developers. Specialist Engineers. Project Managers. Experienced Software Developers.
Life Science	<ul style="list-style-type: none"> Project Management and experienced export marketing professional. Management competencies particularly require strategic planning and negotiation, quality and cost control skills Marketing functions require market research skills and country specific knowledge on regulations Sales competencies require skills in establishing and managing key accounts and distributor relations. Customer Service and Fulfilment competencies require language, inter-culture competencies, logistics and customer service skills. Business to Business sales with knowledge of pharmaceuticals. Software developers for development diagnostics with C, C ++.



	<ul style="list-style-type: none"> ▪ Engineers (production, process) and a Commercial Buyer. ▪ E-business professionals. Experienced sales professionals ▪ R&D and Clinical trial management.
Engineering	<ul style="list-style-type: none"> ▪ Entrepreneurial sales people with languages. ▪ Sales and marketing in the metal fabrication sector, particularly for power generator sets. ▪ Sales skills with German technical language. ▪ Engineers and especially software engineers.
Cleantech/ Sustainable Building	<ul style="list-style-type: none"> ▪ Sales & technical support staff with language skills. ▪ Project Management skills in response to bespoke customer requirements. ▪ Optical engineers. ▪ Key engineering design skills. ▪ Business Development Manager.
International Services	<ul style="list-style-type: none"> ▪ Project Management. ▪ International Sales with language(s) and cultural awareness. ▪ International Marketing and Sales skills with languages. ▪ Industrial Design. ▪ QA Employees for software development. ▪ IT and Analytics. ▪ Software engineers, designers and developers.
Food & Drink	<p>Skills issues specific to multinationals in the food sectors are attracting and retaining high performers to the sector and specifically international sales talent management.</p> <ul style="list-style-type: none"> ▪ Foreign Language and Cultural Awareness. ▪ Business Development. ▪ Sales and Negotiation. ▪ Key Account Management. ▪ Technicians working with customers to develop products most suitable for markets. ▪ UK Commercial skills. ▪ New product development/Innovators.
International Education Services	<ul style="list-style-type: none"> ▪ Sales and web based marketing skills. ▪ Language and intercultural skills.
Tourism	<ul style="list-style-type: none"> ▪ Export Business Planning. ▪ Marketing and sales. ▪ Foreign language skills and cultural awareness - German, French, Italian and Spanish and for Mandarin Chinese, and Hindi.



4. High-Level ICT Skills Recruitment Needs

EGFSN/Forfás Report: Addressing High-Level ICT Skills Recruitment Needs: Research Findings (January 2012)

The immediate skills recruitment difficulties being experienced mainly relate to:

- **Computer Software Engineers:** for the design and development of applications & systems: Specific skillsets required are;
 - Programming languages - Java, JavaScript, C#, C++, C+++, Visual Basic; .Net; SQL data base; Perl, Ruby, Python, Objective-C, Objective - Orientated Programming (OOP).
 - Knowledge of operating platforms - Windows, UNIX / Linux processing environment.
 - Web Development - understanding of Web 2.0 development technologies, XML, Microsoft ASP.Net (web application framework to build sites, applications and services), Personal Homepage Tools (PHP), Microsoft Sharepoint family of software products, HTML skills.
 - Cloud Computing - as a different commercial business model, project management, network skills, data centre experience with operating systems - Microsoft Windows Azure, CITRIX, IBM Tivoli, skills in products such as VMware and hyper-V.
- **ICT - Network specialists and engineers:** e.g. Server Message Block (SMB), wireless sensor testing, collaboration functions, process management, search modules and document management platform, router configuration and management, experience with scripting language Java, C, C+ and network configurations.
- **ICT - security experts:** Internet security and network security models and solutions - certified IT systems, architecture, engineering and management (e.g. Cisco information security systems), firewall configurations administration, authorisation mechanisms.
- **ICT Telecommunications:** Mobile software applications development and programming (.Net and Java have mobile modules as part of their certifications).
- **ICT - Project managers with technical background:** IT professionals with ability to define objectives, control processes and manage people in a new regulatory environment.
- **Sales and Marketing personnel with IT Technical Background and relevant industry knowledge:** To support business development; Oracle and SAP business applications and services and other software solutions for specific business solutions.
- **Personnel with foreign languages skills and ICT technical background:** To fill positions in IT technical support, accounting, marketing and business development; requirement for fluent oral and written French, German, Spanish, Dutch, Flemish and Swedish.

Link to report: <http://www.egfsn.ie/media/EGFSN31012012-Addressing-High-Level-ICT-Skills-Recruitment-Needs.pdf>

Emerging skills demands are around cloud computing, service design, database management, social networks and media, data analytics, development of e-commerce applications, mobile applications and internet marketing. There is an emerging need for data savvy managers and analysts of large volumes of data across all sectors, who can pose questions for analysis, interpret and challenge the results and take appropriate decisions.



The ICT Action Plan *Meeting the High Level Skills Needs of Enterprise in Ireland* January 2012 was launched by the Department of Education and Skills to response to these shortages. The current and medium-term recruitment difficulties experienced by companies mainly relate to ICT honours degree (computing/electronic engineering NFQ Level 8) and above - both for graduate entry level positions and particularly for ICT professionals with experience. In this context, the ICT conversion programmes (700 places in 2012 and a further 760 announced in February 2013) are the most appropriate short term response.

Therefore, in assisting in addressing this demand, Springboard ICT programmes should be for major awards at NFQ Levels 6&7 for potential job opportunities at that level, but primarily for providing progression opportunities to full NFQ Level 8 awards in computing/electronic engineering. In addition, programmes should have an identified enterprise partner or local need and include a work placement component.

Link to ICT Action Plan: http://www.heai.ie/files/ICT_AP.pdf

Like in Ireland, ICT is one of the sectors in Europe that has been expanding even during the economic crisis. The number of ICT practitioners has been growing in Europe at around 3% per annum. An increasing share of employment within the sector is being accounted for by people with high-level skills. This is a result of a shift in subsector employment from hardware towards software; a general shift in the skills mix; and a pattern of simultaneous creation and loss of jobs, resulting in lower-skilled jobs being replaced with higher-skilled ones. There is a resilient demand arising within the ICT sector due to expansion of the business operations of companies, inflow of foreign R&D investment and new start-ups.



5. Skills for the International Financial Services Sector

EGFSN/Forfás report: Future Skills and Research Needs of the International Financial Services Industry (December 2007)

Skills currently in demand are as follows:

- Process innovation and product development for the funds industry and accountants with experience for financial services
- Regulation and Compliance
- Project management
- Hybrid technologists - business analysis with IT/systems skills
- Data Analytics

Link to report: <http://www.egfsn.ie/publications/2007/title,2515,en.php>

Even though this report on Skills requirements in the International Financial services sector dates back as far as 2007, the skills areas identified above still hold true, as confirmed in the annual EGFSN National Skills Bulletin. The ICT skills areas in demand described in section 4 equally apply to the sector, which also has strong ICT requirements. In this context, measures to address ICT shortages, including data analytics, similarly apply to the Financial Services sector, aside from the specific financial skills in demand. Process innovation and product development is an emerging requirement in the Financial Services sector.

In order to ensure the programmes are relevant to the sector and will meet current and future business needs it is strongly advised that engagement take place with relevant industry associations /financial institutions. These include Irish Banking Federation (IBF)/ Federation of International Banks in Ireland (FIBI), Financial Services Ireland, (FSI), Irish Funds Industry Association, (IFIA) and Dublin International Insurance & Management Association (DIMA).

<i>Skill demand</i>	<i>Course topics/ contents</i>	<i>Course features (delivery, scale, etc.)</i>
Accountancy with funds experience	Accounting courses with a focus on fund accounting (modular format)	<ul style="list-style-type: none"> ▪ Degree programme with professional exams ▪ Incorporating applied/case study elements from funds servicing environments ▪ Work experience
Regulation & Compliance Management	<ul style="list-style-type: none"> ▪ Regulation; and ▪ Compliance. 	<ul style="list-style-type: none"> ▪ Degree programme ▪ Specialised modules ▪ Incorporating case studies from financial services ▪ Work experience
Project management	Certificate in Project Management Incorporating modules such as: <ul style="list-style-type: none"> ▪ Project management procedures and techniques; ▪ Project planning and control; ▪ Quality management; ▪ Earned value analysis 	Certificate course in project management best practices incorporating financial services case studies. Recent investors have been looking for staff with project management skills and associated qualifications, and referred to PRINCE2 (Project Management in Controlled Environments 2) or Project Management Institute (PMI) Certification



6. Cross Enterprise Skills Needs

A number of areas of skills demand have emerged in EGFSN reports that are apparent across sectors, including: the need to improve management skills; skills for creativity, innovation and design; improving generic skills such as oral and written communication skills and team working. The main objective is not to address these skills separately but to embed them within existing programmes so that they can be practically applied and developed.

Management Skills

In 2006, the EGFSN report *SME Management Development in Ireland* highlighted deficits across a range of management capabilities relative to competitors including general management, HR, marketing and finance skills, strategic management skills such as inability to plan ahead, product management skills, and functional management skills (sales, training, marketing, supply chain management, IT and R&D. In 2010, the Management Development Council (MDC) found that improved management practice is closely correlated with a range of corporate performance metrics, including labour productivity, sales growth and return on capital employed.

In particular, the MDC report had the following key findings:²

- McKinsey and Co. benchmarked management practices in 5,600 manufacturing firms in 14 countries, including Ireland, which ranked 10th place. Ireland's underperformance partly relates to relatively poor target management, indicating that manufacturers have been slow to adopt many of the modern production techniques that have been applied with great success across industry and in other countries.
- Scores in Irish firms for people management are also below average. The implication is that while firms work hard to attract good people, they are far less effective at equipping their employees to deliver improved performance and at motivating them.
- A detailed examination of the criteria used in the survey to assess management highlights three particular areas where Irish firms need to improve their practice - defining the right metrics; reviewing these metrics; and addressing poor performance
- Many firms in Ireland have difficulties in defining a balanced set of financial and operational metrics necessary to align the shop floor with the corporate agenda. Some have difficulties at reviewing performance against these metrics, and firms are reluctant to take the necessary corrective actions to tackle poor performance.

Management skills are crucial for firms adapting their business offerings, or moving into new markets, as well as for firms striving to be innovative. The Management Development Council identified the following competencies as core characteristics of 'good managers':

Strategic Competencies - associated with a manager's strategic capacity and the relationship with the company's external environment include:

- **Business vision** - identifying opportunities, and potential forces that impact on the company's performance;

² Management Development Council (2010) Management Development in Ireland



- *Problem solving skills* - identifying the key features of a complex situation or problem and the ability to synthesize and make decisions;
- *Resource management* - use of the available resources in the fastest, most economic and most efficient manner to obtain the desired results;
- *Customer orientation* - responding promptly and effectively to customers' suggestions and needs;
- *Effective networking* - developing and maintaining a broad network of relationships with key individuals within the company and in the industry; and
- *Negotiation* - securing the support and agreement of key individuals and groups that can influence the particular area of responsibility.

Executive & Leadership Competencies - comprises the following basic competencies:

- *Communication* - effective, using both formal and informal procedures, and providing specific data to back up observations and conclusions;
- *Organisation* - assigning objectives and tasks to the most suitable people, and monitoring task fulfilment;
- *Empathy* - paying attention to other people's concerns, and respecting their feelings;
- *Delegation* - ensuring that the members of the team have the decision making capacity and resources they need to meet their objectives;
- *Coaching* - helping collaborators to discover areas for improvement and to develop their skills and professional capabilities; and
- *Teamwork* - fostering an atmosphere of collaboration, communication and trust among the members of the team, and stimulates them towards the achievement of common goals.

The EGFSN research identifies the following specific management skills across different sectors:

Key Management Skills by Sector	
ICT	HRM, Negotiation, Communication, Key account management, Export sales planning, Project management and Strategy
Life Sciences	Lean management skills, Networking & relationship building, Negotiation & communication, Strategic export business planning
Engineering	Global partnership management, Product innovation, Negotiation & communication, Strategic business planning, Sales, Marketing & operations management, Knowledge of business opportunities, Strategic thinking & planning, Communications and Entrepreneurship
Clean Tech	International Project Management & technical issues, Entrepreneurship, Strategic export business planning, Contract management, Strategic business development, Planning and managing Market intelligence
International Services	Entrepreneurial Skills and Project Management
Food	Ability to examine opportunities, Strategic Planning and Communications



Skills for Creativity, Design and Innovation

The concepts of creativity, design and innovation as essential for economic success are well established. The EGFSN report on *Skills for Creativity, Design and Innovation* in 2010 defined the terms creativity, design and innovation specifically in the enterprise context and demonstrated how their application has potential direct relevance across the full range of enterprise and occupational activities.

Skills required for creativity, design and innovation, are needed in all industries and in all occupations. While there is some variation between occupations and across industries, some universal points emerge.

- Depth of skill and knowledge is important to creativity and innovation;
- Designing and building products/services to meet customer requirements is crucial. This means listening to the customer, being aware of country specific regulations/specifications, and ensuring that the product/service development process receives real time feedback on required improvements;
- Creativity relies heavily on finding new ways to combine existing ideas. This means that the capability to work well with people whose deep skills lie in other areas is critical;
- All other capabilities have to be underpinned by strong generic skills in areas including communication skills, team-working and problem solving; and
- Creativity and innovation are influenced heavily by the culture of the organisation, and how innovation is managed and led.

There is a close relationship between entrepreneurship, and creativity and innovation.

Entrepreneurial activity can be improved with an increased emphasis on creativity and design turning inventions into innovations. Cultivating an entrepreneurial mind-set, by developing entrepreneurial skills, behaviours and attitudes and equipping learners with the key entrepreneurial competences for entrepreneurial (intrapreneurial) careers or new start-ups is more necessary now in today's economic environment.

Other 'Soft' Skills

Almost all sectors of industry are becoming more knowledge-intensive. This involves a change in the types of skills required, with a rise in the importance of generic skills, including the ability of individuals to work more autonomously, be self-managing, work as part of flexible teams, adapt to change, solve problems, think creatively and engage with innovation as a continuous process.

What was seen as the 'specialist' skill of IT just 10-15 years ago is now regarded as a 'basic' skill, essential for a great proportion of jobs and occupations, although the level and complexity of actual skill utilised will vary substantially across and even within occupations.

The EGFSN, based on international research, has identified the key and most widely shared elements that should be included in a generic skills portfolio as:

- People-related skills – communication, interpersonal, team-working, customer-service skills;
- Conceptual/thinking skills – collecting and organising information, problem-solving, planning and organising, learning-to-learn skills, innovation and creative skills.

These skills are required by enterprises in addition to core specialisms and expertise and should be embedded in programmes.



7. Current Skills in Demand by Occupation

Current Skills in demand by Occupation

Current 'difficult to fill' vacancies identified in the 2012 *EGFSN National Skills Bulletin* and the *Vacancy Overview 2012* are primarily confined to the ICT sector and highly specialised posts in high-tech manufacturing (mostly biopharma), as well as in more traditional manufacturing segments (e.g. agri-food), financial services, the health sector, and roles for those with languages and sales skills. With the exception of ICT, the skill shortages are confined to niche areas, highly skilled and experienced candidates and specific skills mix, e.g. a variety of cross-disciplinary skills.

These shortages can be summarised as follows:

- ICT (software engineers & developers, data base architects, IT business analysts)
- Engineering (biotechnology, pharmaceutical, medical device, chemical and food processing industries in chemical, design, production, electrical, validation and mechanical roles)
- Science (R&D, especially in healthcare and green technology related roles)
- Finance (risk, regulatory compliance, quantitative finance)
- Sales (technical sale, telesales, contact centre roles with languages, online and e-commerce marketing, especially digital marketing)
- Transport (supply chain management)
- Clerical (multilingual accounts, debt collection)

Link to National Skills Bulletin 2012

report: <http://www.egfsn.ie/publications/featuredpublications/title,9537,en.php>

The ICT sector expanded strongly, by 8.5%, well ahead of its medium term growth rate. Employment also expanded relatively strongly in administrative & support services, as well as in financial, insurance and real estate services. At the same time, the accommodation and food services sector and industry overall expanded marginally. With regards to industry, the growth occurred in the manufacturing segment. More specifically, the food and drinks sector benefitted from strong global demand, with exports increasing by 12%. Supported by improvements in cost competitiveness the outlook continues to be favourable for certain activities within machinery and equipment and high-tech segments.

Science Occupations

Recent data points to the demand in the following occupations:

- Biologists (including microbiologists) and chemists as well as research and development project managers for the bio-pharmaceutical sector.
- Chemists are proving difficult to source in the areas of product formulation, analytical development, and research and development in the area of biotechnology.

The demand for science skills is expected to be driven by moves towards higher value added activities within the high-tech manufacturing sectors, increased demand for healthcare and



healthcare products, and the Government's on-going investments in science, technology and innovation. Science skills will also be important in the context of the green agenda.

Engineering Occupations

Demand has been identified for a number of engineering occupations including:

- Chemical and product formulation engineers and analysts, especially with an API background
- Production, process and process safety engineers
- Quality control engineers (for the food and high-tech industries)
- Regulation engineers
- Industrial hygiene engineers
- Validation engineers (telecommunications sector)
- Mechanical engineers (process automation, system control engineers (including Six Sigma specialists and design engineers)
- Electrical engineers with substantial experience in power generation, transmission and distribution (wind energy, high tension power, sub-station power engineers)
- Instrumentation & control technicians in manufacturing (machinery/equipment & med devices).

ICT Professional Occupations

Despite the recession, shortages continue to arise for ICT skills. One third of all mentions for difficult to fill posts were in the area of ICT. ICT skills difficult to source include:

- Computer software engineers and developers with specific skills sets such as:
 - Database architecture, maintenance and operations (e.g. SQL, Transact-SQL, Oracle)
 - Java-related applications (including .Net, C#, C++, Summit, UX/UI)
 - Open source applications (e.g. Linux, Flash/Flex, Ruby on Rails)
 - Online applications (e.g. PHP, CSS, HTML, Interactive visual, MS Sharepoint)
 - Mobile app development (with HTML 5, Objective C, J2ME) for iphone and android platforms
 - Cloud computing
 - Linux/Unix for gaming technologies
- IT security experts: Internet security, network security models/solutions for the financial sector
- IT online support, technical user support, IT testing and troubleshooting.

While some experience was sought (1-5 years), the demand was particularly strong for those with expertise in more than one of the above areas (e.g. expertise in both Java and in the migration of CSM/CRM applications to web based or cloud computing architecture and software as a service (SaaS) applications), indicating that the appropriate skills mix was most relevant.



Business and Financial Occupations

Despite the announced job losses (mainly associated with the restructuring of the retail banking sector, and to a lesser extent insurance), some shortages of financial skills continue to exist.

- Skills difficult to source include:
 - Professionals in credit and risk management (e.g. risk analysts, credit specialists, actuaries)
 - Compliance experts (financial services regulation and compliance with Basel Accords, especially BASEL II and III)
 - Accountants with experience in corporate solvency and financial restructuring
 - Specialists in insurance business (underwriting and claim handling)
 - Business professionals and associate professionals with sophisticated business skills mixes (e.g. IT know-how and communication systems expertise in applications such as SAP, ORACLE and other Enterprise Resource Planning (ERP) systems)
 - Financial managers (e.g. client relationship managers in investment banking).

The demand for high level financial skills, particularly in the area of risk and compliance, is expected to be driven by the continued restructuring and reform of the banking sector.

- While there are currently no shortages of administrative and secretarial skills in general, there are indications that some multilingual roles in niche areas (e.g. credit control, accounts payable, specialist roles in supply chain operations) are proving difficult to fill.

The sector overall continues to benefit from FDI inflows which should provide employment opportunities in a range of associated activities.

Sales and Marketing Occupations

Shortages of the following sales and customer service support skills have been identified:

- Contact centres roles for candidates fluent (mostly at native proficiency level) in one or more European languages (e.g. German, Italian, French and Nordic); the demand was often for language skills combined with relevant product knowledge
- Online marketing and sales roles (across a variety of sectors, e.g. IT, gaming)
- Senior technical and specialised sales representatives, often in a business-to-business (B2B) capacity (e.g. IT, telecommunications, gaming, fast moving consumer goods (FMCG)).

Transport

There were some issues in relation to leveraging expertise in international supply chain management necessary to support growth in international trade, with some evidence to suggest that the skills mix available in these areas may not be sufficient.



8. Current Demand as Measured by Advertised Vacancies

Current Demand as measured by advertised Vacancies

Vacancies identified in the *EGFSN Vacancy Overview 2012* were most frequent for:

- **Sales and related occupations**
 - Business associate professionals (e.g. sales accounts and business development managers, business sales executives, marketing associate professionals)
 - Sales occupations (e.g. field sales agents, retail sales assistants)
 - Customer service occupations
- **Science and engineering professionals**
 - IT professionals (e.g. programmers and software developers, IT business analysts, web designers, IT specialist managers)
 - Design and development engineers
 - Process engineers
- **Business professionals** (e.g. financial project management professionals, chartered accountants, management consultants and business analysts, regulatory professionals, quality control professionals)
- **Administrative occupations** (e.g. book-keepers, payroll clerks, financial clerks)
- **Science and engineering associate professionals**
 - IT associate professionals (e.g. IT operation technicians, IT user support technicians)
 - Engineering technicians
 - Laboratory technicians
- **Corporate managers and directors** (e.g. production managers in manufacturing, managers in warehousing, HR managers, financial managers, retail managers, purchasing managers).
- **Language skills**
 - Primarily in associate professional occupations
 - Positions requiring German had the highest number of mentions in the vacancy data followed by French, Italian, Spanish, Dutch and Danish.

Link to report: <http://www.egfsn.ie/publication/egfsnSearch.jsp?ft=/publications/2013/title,10344,en.php>

The EGFSN Vacancy Overview 2012 draws on the various datasets held in the National Skills Database (NSD), and provides an overview of the demand for labour as measured by trends identified in advertised job vacancies. The vacancy data refers to newly advertised vacant posts on Jobs Ireland (DSP/FÁS) and IrishJobs.ie. It outlines the occupations and job titles of vacancies advertised in 2012 with the objective of identifying skills for which there is currently a demand in the Irish labour market. On average approximately 5,500 vacancies are notified by employers to Jobs Ireland each month and notifications to IrishJobs.ie averaged 2,500 vacancies each month.



Given that employment contracted between 2011 and 2012 (Quarter 3) for all occupations except for managers, professionals and associate professionals, there was little expansion demand suggesting that most of the vacancies arising were due to turnover and/or replacement.

Of interest to the Springboard call are the following professional and associate professional occupations which appeared most frequently:

- Business sales executives (e.g. sales representatives/agents; 8% of vacancies on Jobs Ireland)
- Collector salespersons and credit agents (e.g. field/door to door sales agents; 5% of vacancies on Jobs Ireland)
- Programmers and software development professionals (accounting for 6% of all IrishJobs.ie vacancies in 2012)
- Sales accounts and business development managers (5% of vacancies on Irishjobs.ie)
- Book-keepers, payroll managers and wages clerks (3% of vacancies on Irishjobs.ie)
- Business sales executives (3% of vacancies on Irishjobs.ie)
- Business and related associate professionals (e.g. data analysts, QA/compliance administrators, logistics analysts; 3% of vacancies on Irishjobs.ie)

The vacancies for professional occupations were by far the most likely to require a third level degree qualification and generally required 2-6 years' experience.

Occupations and job titles

Vacancies notified to IrishJobs.ie and Jobs Ireland combined were most frequent for:

Sales & related occupations	<ul style="list-style-type: none"> ▪ Business associate professionals (e.g. sales accounts and business development managers, business sales executives, marketing associate professionals) ▪ Sales occupations (e.g. field sales agents, retail sales assistants) ▪ Customer service occupations
Science & engineering professionals	<ul style="list-style-type: none"> ▪ IT professionals (e.g. programmers and software developers, IT business analysts, web designers, IT specialist managers) ▪ Design and development engineers ▪ Process engineers
Business professionals	<ul style="list-style-type: none"> ▪ Financial project management professionals, chartered accountants, management consultants and business analysts, regulatory professionals, quality control professionals.
Administrative occupations	<ul style="list-style-type: none"> ▪ Book-keepers, payroll clerks, financial clerks
Science & engineering associate professionals	<ul style="list-style-type: none"> ▪ IT associate professionals (e.g. IT operation technicians, IT user support technicians) ▪ Engineering technicians ▪ Laboratory technicians
Corporate managers & directors	<ul style="list-style-type: none"> ▪ Production managers in manufacturing, managers in warehousing, HR managers, financial managers, retail managers, purchasing managers.



Language skills are still in demand; this is particularly the case for associate professional positions. German was the most frequently mentioned language required, followed by French, Italian, Spanish and Dutch.

Vacancies by Sector

Vacancies (notified to IrishJobs.ie) were most frequent in the following sectors:

- ICT
- Sales, marketing and customer service
- Accountancy and financial services/insurance
- Science, pharmaceutical and food
- Hotel and catering

In 2012, the IT sector accounted for over 20% of all vacancies advertised through IrishJobs.ie. A further 9% were vacancies for each of the sales and science, pharmaceutical and food sectors.

There was a significant jump in the proportion of vacancies notified for the science, pharmaceutical and food sector from 3% in 2010; this is primarily related to vacancies notified by one pharmaceutical company (with over 1,300 vacancy notifications in 2012).

Difficult to Fill Vacancies Identified

Managerial

- Managerial occupations accounted for 2% of all notified vacancies to Jobs Ireland and 6% of vacancies notified to IrishJobs.ie in 2012 showing slight increase between 2011 and 2012
- Vacancies were most common in the IT sector, retail and sales; combined these sectors accounted for almost a third of all notified managerial vacancies to IrishJobs.ie
- Vacancies for managerial positions were most frequent for operations managers across all sectors, services managers in banking, retail and hotel and catering, HR managers, financial managers and sales and marketing managers.
- Language skills were required for a number of managerial positions including German, French, Dutch, Swedish and Norwegian, while a high level of experience was a key requirement for many posts advertised.

While relatively limited, some difficult to fill vacancies were reported for managers in the Recruitment Agency Survey conducted in October 2012 in the following specific niche areas:

- Financial managers and directors (for roles in financial services e.g. business takeover and M&A, client relationship, etc.)
- Purchasing managers & directors (procurement and global supply chain roles)
- Marketing and sales directors (for senior roles in business-to-business sales in IT & biopharma)
- Managers and directors in retail and wholesale (agri-food related activities)



Professionals

- Professional occupations accounted for 5% of all notified vacancies to Jobs Ireland and 29% of vacancies notified to IrishJobs.ie in 2012. Notifications to IrishJobs.ie have seen an increase in 2012, peaking in the second quarter at almost 900 professional vacancies notified each month. These vacancies were primarily in the IT sector with over a 40% share, followed by business and financial services along with science and engineering occupations
- The October 2012 Recruitment Agency Survey found that professionals accounted for the largest segment of difficult to fill vacancies.

IT and telecommunication professionals:

- Programmers and software developers (accounting for a quarter of all difficult to fill mentions) with specific skill sets such as Java, C++, Summit, .NET, C Sharp, PHP, CSS, VBS, Interactive visual applications (e.g. 3D imaging for gaming industry), those proficient in open source software/operating systems (e.g. Linux) and applications (e.g. Ruby on Rails and Flex); IT skills associated with cloud computing (e.g. expertise in Java related applications and the migration of CRS / CRM application to web based or cloud computing architecture) and financial/business application skills (e.g. SAP analysts)
- IT business analysts, architects and system designers (e.g. Oracle and SQL developers)
- Web development professionals (including Wordpress programmers)

Engineering professionals -accounted for approx.16% of difficult to fill mentions, particularly for:

- Process and production engineers (lean production, process automation and system control and associated skills e.g. Six Sigma); quality assurance, validation, and regulatory (standard) compliance
- Design and development engineers including R&D engineers (e.g. for medical devices)
- Electronic engineers - mobile telephony developers (e.g. android mobile telephone technology, engineers with PCB (printed circuit boards) skills, HTML5 mark-up language, Smartphone Mobile Apps such as Objective-C 2.0, Objective C J2ME /Java ME -Java platform designed for embedded systems such as mobile devices, etc.)
- Electrical engineers, wind energy engineers and power generation and transformation/high tension and substation power engineers with experience.

Business Professionals:

- Chartered and certified accountants and taxation experts, i.e. accountants with experience in financial services, solvency, auditing, regulatory compliance (e.g. financial regulation skills such as Dodd-Frank compliance, etc.)
- Management accountants and auditors
- Actuarial specialist, risk and credit risk analysts
- Business and financial project management professionals - demand persists for those with specialised skills such as SAP business analysts with relevant industry knowledge, business analysts with in-depth knowledge of financial investment markets, data analysts with business intelligence related skills, etc.
- Scientists** (natural and social science professionals): demand mostly stemmed from biopharma offering opportunities for chemists (e.g. product formulation, analytical development, and chemical process engineering and production process planning)



Associate Professionals & Technical Occupations

- Associate professional/technical occupations accounted for 22% of all notified vacancies to Jobs Ireland and 34% of vacancies notified to IrishJobs.ie in 2012. While associate professional/technical vacancies notified to Jobs Ireland have seen a slight increase in 2012, notifications to IrishJobs.ie for this occupational grouping increased by 25%. Vacancies were primarily in sales, IT, science, pharmaceuticals and food, marketing and financial services.

Associate professional skills stated as being difficult to source in the October 2012 Recruitment Agency Survey were mainly for:

- Science, engineering and production technicians (quality assurance & validation)
- Information technology technicians (IT operations and IT user support technicians)
- Sales, marketing and related associate professionals (business sales executives, technical sales representatives for the medical device industry)
- Health associate professionals (cardiac technicians)

Administrative and Secretarial Occupations

- Administrative/secretarial occupations accounted for 6% of all notified vacancies to Jobs Ireland and 12% of vacancies notified to IrishJobs.ie in 2012. Vacancies for administrative/secretarial occupations through Jobs Ireland have remained steady in recent years; vacancies advertised through IrishJobs.ie have seen an increase on 2011 in line with an overall increase in vacancy notifications. Vacancies were primarily in the finance, banking, accountancy, and secretarial/admin sectors.

Administrative occupations reported as being difficult to fill were the following:

- Administrative roles in finance (e.g. accounts clerks with languages, including multilingual candidates for positions in areas such as accounts payable, credit control and payroll)
- Other administrative occupations: niche administrative roles such as specialist roles in logistics/supply chain operations and sales administration.

Skilled Trades Occupations

- Skilled trades accounted for 11% of all notified vacancies to Jobs Ireland and 5% of vacancies notified to IrishJobs.ie in 2012. While the number of vacancies for skilled tradespersons through the Jobs Ireland has declined (6,100 compared to 7,300 in 2011) the share of vacancies notified to IrishJobs.ie has risen by one percentage point year on year. Vacancies most often occurred in the engineering, IT, hotel and catering, science, pharmaceutical and food sectors.
- A significant proportion of the skilled trade vacancies on IrishJobs.ie that indicated the educational levels required at least a third level degree. Demand for skilled trade persons may be encroaching on what has been regarded as technician level work, e.g. in the area of engineering.

There were some reported difficulties in filling certain posts namely for:

- Food preparation and hospitality trades (limited to butcher/deboners and chefs), and
- Skilled metal, electrical and electronic trades (limited to welding trades)



Sales and Customer Services Occupations

- Sales and customer service vacancies notified through Jobs Ireland, accounting for 12% of all Jobs Ireland vacancies and for almost 80% of overall sales vacancies when combined with Irishjobs.ie sales vacancies. There was a 10% increase in Jobs Ireland vacancies in this occupational group compared to 2011. In terms of sectors, vacancies most often occurred in customer services/call centres, banking, financial services and insurance and sales.

There were a number of roles in sales and customer services which were considered difficult to fill in the Recruitment Agency Survey in October 2012, namely:

- Sales related occupations:
 - Sales & marketing skills that are integrated with IT (e.g. online digital marketing, sales roles within the online gambling industry)
 - Telesales with languages - e.g. multilingual sales combining some aspects of IT technical support
- Customer service occupations: multilingual or native language speakers in call and contact centre occupations, often with some IT skills - e.g. German with IT; Customer care and sales roles with languages namely Nordic, French, Italian and Spanish

Operatives

Notifications for operative positions accounted for 6% of all notified vacancies to DSP/FÁS Jobs Ireland and 4% of vacancies notified to IrishJobs.ie in 2012. Vacancies most often occurred in the IT and science, pharmaceutical and food sectors.

Difficult to fill mentions in the Recruitment Agency Survey in October 2012 were limited to the following: process operatives (in biopharmaceuticals and the food industry)



9. Future Skills Needs - Job Announcements

Despite significant job losses occurring since the recession began, job announcements in the media continued, particularly for IT professionals and sales related occupations. These were reported in the *EGFSN Vacancy Overview 2012*. Expansion demand was also confirmed by companies most for the IT sector followed by the medical devices and pharmaceutical sectors.

Managerial Occupations

- There were few specific job announcements for managers in 2012; those mentioned were mainly in manufacturing (medical devices), finance (senior management roles, project management) and ICT (non-technical management roles).
- Typical roles were for senior managers with some also specifying supply chain management or multilingual skills.
- Positions for manager occupations are also implicit in other job creation announcements, particularly where large numbers were involved, e.g. contact centres (customer service, sales and marketing).
- Job creation for senior managerial roles is confirmed by the jobs announced by companies in 2012, to be rolled out over the medium term. These roles are relatively small in number and mostly for senior positions (CEO or director level), sales and marketing directors, as well as some HR, finance and legal roles.

Professionals

A significant share of the job creation announcements in the media during 2012 were for professional positions. Most of the job announcements were in the IT, medical devices, pharmaceutical sectors, and to a lesser extent, green technology.

The demand for professionals was particularly strong for:

- Software engineers and developers, test engineers, database architects, systems engineers, support engineers and network engineers; the positions were in research and development centres, cloud computing, e-commerce and electronic payments, online sales, marketing and advertising, mobile (e.g. tablet computers), internet and social media technologies and, to a lesser extent, IT for specialised sectors (e.g. healthcare or manufacturing management solutions).
- Research & development engineers and scientists (especially medical devices, food processing).
- Regulatory and quality assurance professionals (pharmaceuticals and IT).
- Electrical/electronic engineers (green energy and smart power generation; semiconductors).
- Production/industrial engineers (pharmaceuticals, medical devices, food processing).
- Life scientists, chemical/biochemical scientists and operation research scientists.
- Some temporary jobs will be created for construction professionals (civil engineers, quantity surveyors, construction project managers) in projects associated with the expansion of plants and building of new premises.



- Business analysts/ enterprise risk analysts.
- Finance, accounting and tax experts (IT, consulting, financial and manufacturing).
- Supply chain, programme and change management consultants.

Many of the positions specified high skilled, senior roles, although there were also some job creation announcements for graduate position recruitment.

Job creation for professional occupations is also confirmed by the jobs announced by IDA client companies in 2012; these roles are predominantly in the IT, pharmaceuticals and medical devices sectors and mainly for roles in IT (software/R&D developers, IT managers), followed by engineers/scientists (including R&D), business professionals (e.g. accountants), and quality and regulatory professionals.

Associate Professionals & Technical Occupations

At associate professional level, job creation announcements were chiefly for roles in:

- IT technical support, including multilingual (across a range of sectors, including business and financial software support and gaming).
- Business associate professionals (financial services, asset management, investment management).
- Business sales and marketing (sales accounts and business development, and buyers and procurement officers).

A minority of job announcements related to the creation of graduate positions.

Job creation for associate professional occupations is also confirmed by the jobs announced by companies in 2012; sectors in which these roles are expected to occur include IT (especially for IT support technicians), finance and insurance (e.g. financial advisors, fund accountants), and high-tech manufacturing (engineering/science technicians).

Administrative and Secretarial Occupations

- Job creation announcements for administrative occupations included those associated with office support for a range of sectors (e.g. retail, ICT, transport) as well as administrative roles in supply chain management, order management, finance, HR and accounts payable/receivable. While there were some job loss announcements for administrative roles, the losses were mainly related to retail bank clerks and insurance clerks.
- Job creation for administrative roles is confirmed by the jobs announced by companies in 2012, particularly in the areas of HR, finance, and office managers/supervisors and mostly in high-tech sectors (e.g. medical devices and pharmaceuticals) and IT.



Skilled Trades Occupations

- There were a number of job creation announcements for the skilled trades in construction. Almost all the posts were temporary positions and associated with the new building or expansion of manufacturing facilities in sectors such as pharmaceuticals, food/beverages and retail.
- Other skilled trades include butchers/fish mongers for job creation announcements in the food processing field.

Sales and Customer Services Occupations

Sales and customer service occupations were the second most frequently mentioned category of job creation announcements, after professional occupations. Job creation announcements for sales and customer occupations were mainly for:

- Sales assistants in various retail outlets.
- Telesales (with software, social media and other IT skills).
- Contact centre occupations (e.g. insurance, television services, other sales and customer service support functions on behalf of other organisations in, for example, the travel industry, IT security, and electronic payments).

Although there was a limited number of job announcements for customer service occupations in contact centres the number of jobs created was significant for several companies (100+).

Job creation for sales and customer service occupations are confirmed by projects announced by companies in 2012, chiefly in the IT and high-tech manufacturing sectors. The roles are predominantly for customer support occupations and, to a lesser extent, sales and marketing roles (including multilingual sales).

Operatives

Job creation announcements for operative occupations were few in number and chiefly for process operative roles in manufacturing (mainly pharmaceuticals, food processing, medical devices and to a lesser extent energy sectors) and a limited number of delivery van drivers.

Job creation for operative occupations is confirmed by projects announced by companies in 2012, especially for manufacturing and production operatives in industry (e.g. pharmaceuticals).

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