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# ICT FUTURE SKILLS ACTION PLAN

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THE NORTHERN IRELAND ICT FEDERATION

## ICT FUTURE SKILLS ACTION PLAN

### Background

The ICT industry in Northern Ireland is currently experiencing a period of unprecedented growth. Based on research carried out to underpin the Sector Skills Agreement (SSA) for IT in Northern Ireland<sup>1</sup>, the industry here is forecast to grow at 2.4% per year from 2006-2021, over 3 times the rate of overall employment growth in Northern Ireland.

The requirement to attract new entrants to the ICT industry is set against a backdrop of almost full employment and the resulting competing demands for talent.

The most significant growth area within the ICT sector in NI is the software industry. While an increasing number of software professional jobs are being created, there are fewer graduates currently completing degrees in computer science / software engineering subjects and therefore being in a position to take up these jobs. The growth in demand for these graduates is not therefore being matched with supply. There are also fewer young people and adults enrolling in computer science and related subjects at higher education level, and so unless action is taken it would appear that the decline is set to continue.

While this is not a NI specific phenomenon – other countries including New Zealand, Australia, Germany, France, Spain and Ireland are experiencing similar skills shortages – there is clearly a requirement for collective action to address the problem.

### Purpose

The SSA for IT referred to above was published in February 2007 and endorsed by DEL and InvestNI as an agreed programme of actions which would address the medium and long term skills issues facing the ICT sector as a whole in Northern Ireland. The SSA includes actions at all levels of skills development and also addresses the needs of IT users. Work has already begun and will continue on implementing this agreement with the co-operation of all partners.

Subsequent to the publication of the SSA, it became apparent to DEL that there were particular skills issues facing the software part of the ICT sector, which is the largest growth area within NI's ICT industry. A Future Skills Action Group (FSAG) for ICT was established. The purpose of this group was to bring together representatives of the supply side (higher education providers, DEL, Department of Education, schools) and a number of companies who were facing these

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<sup>1</sup> Published by E-Skills UK (the Sector Skills Council for IT and Telecoms) in March 2007

immediate skills issues. As a result of the workings of that group a decision was made to appoint a dedicated resource within DEL and InvestNI to develop a short term plan of action to address these skills needs, and to co-ordinate activity across both organisations, E-Skills UK, Momentum and industry.

The scope of this plan is therefore to identify additional actions to complement those already in the SSA, which will contribute to the overall objective of building a pipeline of appropriately qualified software professionals. These additional actions are specifically aimed at the software part of the ICT sector. The actions do not address the broader IT needs of other industries (other than those with a heavy emphasis on software activities), nor general IT skills issues at intermediate and user level.

The actions are mainly short term, though it is recognised that the benefits associated with them may not be realised for a period of years.

A key target for now which has been set for the short period of the plan is to fill 200 places per year on the Software Professional Conversion Course. But the overall objective of the plan is to increase the number of people joining the software industry through various routes. This could be addressed through action at a number of points of intervention e.g. increased enrolments on relevant university courses, improved retention of participants on these courses and an increase in the number of people who complete these courses and an increase in the number of people who complete these courses and go on to work in the industry.

Implementation of the plan will be led by a project group made up of DEL, Invest NI, E-Skills UK and Momentum – this group will in effect operate as a sub-group of the ICT FSAG. The group will also work in conjunction with the ICT industry and skills providers over the next 12 months.

The project group will meet on a monthly basis – this meeting will be convened by the chair of the ICT FSAG. Progress reports at a more strategic level will also be provided to the ICT FSAG on a quarterly basis. These reports will include measurement of the participation of all those involved in implementing the plan, including the ICT industry.

The partnership approach which has been taken clearly relies not only on the commitment of DEL, Invest NI, E-Skills UK and Momentum but also the industry itself. Without active support from the sector, real change cannot be delivered.

### Structure

The plan is structured around 3 thematic areas:

**Skills provision** – relevance, quality and accessibility

**Career attractiveness** – information and promotion

**Additional sources of talent** – national and international outreach

## Theme 1 -Skills provision – relevance, quality and accessibility

Under each thematic area, key issues and associated actions are outlined, accompanied by specific targets. For each action, the lead body is identified but also the other organisations which need to provide input / support for the action to be delivered.

Where actions go beyond the core activities of DEL, Invest NI, E-Skills UK and Momentum, the requirement for additional resources is highlighted.

### Current Issues

While adequate data is available about the amount of ICT related further education, higher education and training provision in Northern Ireland, it is unclear from that data whether what is currently in place is

- adequate (in terms of number of student places available at the various levels of higher education study)

- reflective of the needs of the economy (is there the right combination of general IT /combined IT degrees versus disciplines such as software engineering and computer science, in terms of supporting the growth demands of the economy in NI – regular information on the numbers and types of jobs in this industry must be provided to inform this issue.)

- relevant to industry (is course content based on occupational standards, is course content sufficiently up to date in terms of industry advances, are there sufficient opportunities for work placements / sandwich years / internship programmes)

- accessible (can students reasonably progress from A level curriculum to HE curriculum – are foundation years offered? Is there enough part-time provision for those already in work and is the mode of part-time delivery sufficiently flexible to accommodate their needs?)

- integrated (is ICT sufficiently embedded into other HE curricula, are employability skills sufficiently embedded in ICT provision?)

It is recommended that this strand of activity is progressed in tandem with the career attractiveness strand. While it is obviously important to take early steps to encourage more young people and adults into the industry, it is equally important that appropriate provision is in place for them to become the software professionals of the future.

## Actions

1. That early informal discussions between industry and HE providers are further developed with the formation of an HE/Industry forum as envisaged in the E-Skills UK SSA Action Plan. This forum should include representatives of all HE providers in Northern Ireland and should meet by the end of October 2008 in an extended workshop format. The workshop should be provided with information about existing provision and a list of issues to examine including:

- take up of existing HE software engineering / computer science provision (if current places are already being filled by candidates who have the numerate skills and academic ability to complete the courses then targeted expansion should be considered – should these additional places, if required, be co-funded by industry? If the places are not being filled, what are the reasons for this?)

- consideration of additional new provision e.g. joint proposal from UU/QUB re MSC Conversion Course

- retention of students engaged in HE ICT provision (consideration of foundation year being used for students as an alternative to leaving courses – if this is not already done, further opportunities for scholarships and/or internships with industry)

- curriculum review (universities to outline the position on this particularly in relation to employer engagement, FE colleges similarly in respect of Foundation Degree provision)

- integration of employability and business skills (including consideration of new targeted provision such as the ITMB – IT Management for Business Degree)

Following the workshop the HE/Industry Forum should meet on a quarterly basis to progress the actions identified and to share information. The group should also be informed by regular forecasting information on the number and types of jobs available / becoming available – this should be provided by Momentum and InvestNI.

The formal workshop process should be repeated in approximately six months in relation to intermediate provision, subject to additional career opportunities being available at this level.

**Lead organisation** – DEL will be responsible for compiling information about existing provision and for making the necessary arrangements for the workshop. DEL officials will draw up an action plan outlining the outcomes from the workshop. E-Skills UK will provide information on the Sector Qualifications Strategy for NI and the ITMB degree. Momentum and INI will identify relevant stakeholders from industry who should participate in the forum. E-Skills UK will retain ongoing responsibility for regular meetings of the forum.

2. Software Professional Course – DEL will fund two more intakes of the SPC, each with up to 100 places on offer, to commence in September 2008 and February 2009. DEL will bring forward proposals to the SPC Steering Group and any other employers who wish to become involved with the programme to increase the attractiveness of the programme to potential participants. The Department will continue to support these future intakes including promotional activity. If plans are progressed to introduce an MSC Conversion Course in September 2008, the entry and output level of the SPC will be reviewed.

Momentum will identify suitable industry partners for each cohort – a commitment will be needed from participating companies with a view to recruiting 100 graduates per intake.

3. E-Skills UK will continue to take forward development of the IT Professional Pathways for NI project. The purpose of this project is to support the future strong demand from employers for IT professionals in NI by the development of a seamless, IT Professional Pathways skills framework specific to employers' needs. E-Skills UK will develop and submit a proposal in respect of funding for the early adopter trial by October 2008.

4. Initial discussions held with InvestNI regarding the feasibility of introducing 'The Guide' (Business IT Guide) to NI. E-skills UK plan to review the guide content with InvestNI again in January 2009. The Business IT Guide is an online tool designed to help managers and leaders of smaller firms understand how technology could benefit their business and support them in taking the necessary action.

## Theme 1 – Skills Provision – relevance, quality and accessibility

Objective	Measure	Targets	Responsibility	Approximate Cost	Progress
To deliver an industry / Higher Education workshop tasked with addressing the issues outlined on page 4 – to include suitability of current provision, retention issues and financial support for students.	Specific, agreed actions identified as a result of workshop  Agreed programme of university / industry forum meetings	Hold workshop by end October 08 Complete action plan by mid November 08  Hold future meetings on quarterly basis	DEL to organise workshop E-Skills UK, Momentum and INI to provide workshop materials with particular ref to forecasting information  E-Skills UK to facilitate programme of meetings	£20k	Initial discussions with universities completed.
To develop a marketing plan to support future recruitment to the Software Professional Course	Application and participation rate of SPC  Level of media reporting	Appoint marketing consultants by end March 08. Develop marketing plan by end April 08. Recruit 100	DEL to determine approach to future marketing of programme. Industry commitment required for new	£60k	Marketing consultants appointed. Marketing campaign has commenced for September 08 intake.

Objective	Measure	Targets	Responsibility	Approximate Cost	Progress
		participants in September 08 and February 09	approach to SPC.		
Business Improvement Training Programme	To provide support for higher level skills development in IT companies through Business Improvement Training Programme.	Included in Invest NI's operational targets for BITP.	InvestNI		
To progress development work on IT Professional Pathways for NI.	Design of seamless IT professional framework incorporating learning for all appropriate ages (16-adult) at all levels.	Develop proposal for early adopter trial by end October 08.	E-Skills UK		
To explore the feasibility / desirability of introducing 'The Guide' (the Business IT guide) to Northern Ireland	Decision is taken in relation to introduction in NI.	Initial discussions held by end April 08.	E-Skills UK to make initial presentation		Completed



## Theme 2 - Career attractiveness – information and promotion

### Current Issues

There are two key elements to this theme

- what information is currently available about careers in the ICT industry in NI and how the quality, quantity and flow of this information to those who need it can be improved?
- while some initiatives are already in place in terms of promoting a career in the ICT sector, there is clearly scope for this to be co-ordinated for maximum impact

### Careers Information

This is currently provided through the following channels:

- Careers Service advisers
- Careers Service website
- University Careers Services including websites
- Careers teachers in schools
- E-Skills UK website (which is linked to the Careers Service website)

The information provided through Careers advisers must remain impartial. Careers advisers do not promote one particular career path or sector. There are however opportunities to ensure that the information these advisers receive (and therefore pass on) is up to date, accurate and frequent.

Beyond the careers network there are wider opportunities to influence career choices using a variety of media. Currently young peoples' perceptions of a career in ICT may be influenced directly by those they may already know in the industry, through work experience placements and indirectly through the views of their parents. The views of their parents may be influenced by what they read about the ICT industry in the media.

### Key messages

Any promotional activities taken forward to address the current negative perceptions surrounding the industry should be based around the following key messages:

- The ICT industry offers good quality jobs with exciting opportunities for progression
- The software profession in particular offers a range of career paths, and salaries increase in line with experience.
- There are a diverse range of jobs on offer (these need to be explained in a way which can be easily understood by non-technical audience)
- Working in ICT is fun
- Working in ICT is interesting and varied

- You can use your ICT skills in a wide range of other industries
- There are plenty of opportunities for women in the ICT industry
- You **can** do it!

### Target audiences

Target audiences for the range of activities should include

- those making GCSE subject decisions (14 plus)
- those making decisions about further study post GCSE including A levels
- those at university making career choices
- those who possess the relevant skills but have left the ICT industry

### **Actions**

#### Information

1. In accordance with the Memorandum of Understanding between DEL Careers Service and E-Skills UK, E-Skills UK will supply careers advisers with regular information including labour market information about career opportunities in the ICT sector with particular emphasis on the software industry. This can be provided to the Careers Service information team who will then ensure it is circulated to the Careers Service network. E-Skills UK should similarly engage with the Universities' Careers Service.

E-Skills UK should liaise directly with all the careers bodies to identify careers events which the sector can participate in e.g. Careers Service Occupational Information Days, UCAS Careers Fairs etc. When identified E-Skills UK should liaise with Momentum to ensure industry awareness and participation at all relevant events.

E-Skills UK participated in two DEL Information Sessions for Careers Advisers in March 2008. These events included input from Momentum.

InvestNI and Momentum will provide case studies of companies and individuals in the IT industry to augment the information available. Momentum can also offer 'work experience' in the IT industry to Careers Advisers.

E-Skills UK and Momentum should meet with the DEL Careers Service and draw up a programme of relevant events and areas for the 08/09 school year. This activity should also include the NI Schools and Colleges Careers Teachers Association.

2. As referenced in the DEL Careers Service/ E-Skills UK MOU, information on ICT careers on the careers service website should be reflective of current industry career paths and opportunities. The content of the E-Skills UK website should also reflect any Northern Ireland differences. Current content of both websites should be reviewed. This action should be taken forward by E-Skills UK with the co-operation of the Careers Service. Both reviews should be completed by end June 2008.

### Promotion

3. A career attractiveness campaign should be developed and delivered to encourage more young people and adults to choose a career in the software industry. This campaign should be underpinned by a consistent campaign identity which should be used in all relevant marketing materials. The campaign should be informed by focused research identifying the reasons why young people do not currently choose a career in IT, and the messages and methods of communication considered most effective in reaching the target audience or audiences. It should also consider other sources of talent such as those who have previously worked in the ICT industry but have moved to other areas of employment, or are currently unemployed.

An external marketing agency should be engaged to develop proposals in parallel with the completion of the research. The outcome should be a fully costed marketing campaign initially aimed at young people making decisions about university applications – the campaign should therefore begin no later than September 2008. The longer term focus of the campaign should also include younger people aged 14 plus who are making subject choices which will impact on future career options. A key target group for the campaign will also be parents of young people making subject and career choices.

The content of the campaign should draw on work carried out elsewhere to date e.g. E-Skills UK Revitalize IT campaign and should also complement any related activity e.g. measures to promote STEM subjects in schools. This will be particularly important in respect of activities for those in the 14 plus age group, where it is likely that the specific ICT activity will form part of a broader programme to encourage uptake in STEM subjects.

4. Ambassadors for the NI ICT industry should be identified who will represent the sector at careers events, visits to schools and will be profiled in the local business media. Momentum should liaise with member companies to identify suitable ambassadors and should explore potential existing models of operation such as the Graduate Champion programme taken forward by ICT Ireland.

5. Momentum to use online resources such as the DEL Careers Service and Northern Ireland Careers Teachers Associations' websites to identify career events in schools which Momentum and its member companies can directly participate in. E-Skills UK should participate in these events where appropriate. Momentum should also initiate its own careers events for schools following the model of the recent Careers Day at QUB. Four events should be delivered each year to target age groups and should be timed to coincide with when key decisions are being made by young people about future career paths.

6. DEL will notify E-Skills UK and Momentum of forthcoming Job Fair opportunities (these events are open to employers with current vacancies) – E-Skills UK and Momentum will encourage participation in these events by companies where appropriate. DEL will also discuss with E-Skills UK and Momentum the potential for holding a software industry specific Job Fair, or alternatively a Job Fair for the broader science, engineering and technology industries which would include software companies.

DEL will also deliver a presentation to E-Skills UK, Momentum and member companies about the services which can be offered through Jobcentreonline, Employersonline and EURES (see theme 3 of the action plan for more information on this)

DEL, in conjunction with DE, will advise Momentum about other programmes / initiatives such as Young Enterprise, Sentinus, Discovering Queens, Step UP, with a view to securing a strong ICT presence within these broader activities.

7. Momentum should implement the 'Adopt a School' proposal, subject to agreement and advice from DE, on a pilot basis using the ICT Ambassadors. The model to be used should be informed by work carried out in other industries e.g. Norbrook in Newry. Subject to a positive evaluation the model should be extended. The objective is to have 5 schools ready for adoption plus the requisite number of employers to support this initiative in place by August 2008. The programme will commence in September 2008. Existing opportunities for ICT companies to participate in work experience programmes should be fully exploited using organisations such as Charter Work Experience and FOSEC.

## Theme 2 – Career Attractiveness – information and promotion

Objective	Measure	Targets	Responsibility	Cost	Progress
To provide Careers Advisers with engaging, current and sufficient information on career opportunities within the ICT sector.	Careers Advisers feedback	E-Skills UK meeting Careers Services by end April 08 – agree programme of events by end May 08.	E-Skills UK Momentum and INI to provide case studies on companies and individuals. Momentum to offer 'work experience' for careers advisers in industry		Initial meetings held – to be repeated for 08/09 school year.
		Participation in DEL Careers Service Information Sessions for Careers Advisers – March 08	E-Skills UK with Momentum participation		Completed
	Information on Careers NI and E-Skills UK website.	Review web content by end June 08	E-Skills UK / Careers Service		

Objective	Measure	Targets	Responsibility	Cost	Progress
To develop a comprehensive media / marketing campaign to encourage more young people to choose a career in IT.	Campaign endorsed by industry and delivered on time within budget	Building on initial research, recommendations for engaging target audience to be completed by end March 2008.	E-Skills UK	£20k	Completed
		Appointment of consultants to be progressed in parallel to research.	DEL with input from E-Skills UK, Momentum and INI	£200k	Completed
		Planning and design stage to be complete by June 2008.	“”		
		Campaign to commence in Aug/Sep 08	“”		
To identify ambassadors for the NI IT industry	20 ambassadors identified with appropriate age and gender profile	To identify ambassadors and have agreements in place to use same by July 2008.	Momentum	tbc	

Objective	Measure	Targets	Responsibility	Cost	Progress
To engage in appropriate careers outreach activities	Participation in careers events delivered by schools and other educational bodies	Contact schools and draw up programme of participation by August 08	Momentum with input from E-Skills UK	tbc	
	Careers events for schools delivered	4 events per year following the model used in November 07	Momentum with input from E-Skills UK		
	CC4G operational in 40 schools with training completed. Continuation of programme beyond December 2008 with industry backing	Identify private sector support by December 08.	E-Skills UK with input from Momentum		
	Specific CC4G events delivered (dependant on future of initiative being secured through industry sponsorship of CC4G)	Scope potential for specific events by May 08	E-Skills UK with input from Momentum		
	Participation in job fair opportunities	DEL to highlight opportunities to	Momentum and E-skills		

Objective	Measure	Targets	Responsibility	Cost	Progress
		Momentum and E-Skills UK – E-Skills UK, Momentum and/or member companies to participate			
To deliver a pilot 'Adopt a School' programme	Feedback from school and students on their perceptions of a career in the IT industry  IT sector participation in work experience initiatives	Have 5 schools ready for adoption plus the requisite number of employers to support this initiative in place by June 08. Programme to commence Sept 08	Momentum, with co-operation of DE.		



## Theme 3 - Additional sources of talent – national and international outreach

### Current Issues

In order to broaden the pool of talent available efforts need to be made on a co-ordinated basis to attract or attract back to Northern Ireland people with the skills required to meet the needs of our economy. Government will support and assist employers in using these sources to meet their workforce needs. This issue is of particular relevance to the ICT industry, given the particular skills shortages in this area.

There are five key target groups:

- Students currently enrolled in HEIs in Great Britain and the Republic of Ireland.
- People who are originally from NI but are currently working in GB, ROI and further afield.
- Overseas students currently enrolled in NI HEIs – but intend to leave after they complete their studies.
- Potential overseas students who may be encouraged to study in NI HEIs.
- European Economic Area (EEA) nationals who may be encouraged to come and work in NI.

A number of initiatives have already taken place and/or are planned to attract skilled professionals to Northern Ireland.

DEL & Recruitment Agencies Initiative – Christmas 2007

Attract Initiative – Invest NI – this involves the establishment of a website designed to generate increased awareness of job opportunities in NI, leverage existing networks/third party organisations (e.g. alumni organisations, etc) to get individuals to register their interest, create a searchable database of skillsets (as registered by users) to be used by INI and build an online community

DEL Skills Visits to Scottish Universities – visits planned to take place in May 2008

DEL funding of NI Brand for HE and FE – to attract overseas students to NI

Futures Initiative – Invest NI (although this is not the primary aim of the programme it may in the longer term be a by-product of it)

EURES – European Employment Service

### Other actions which could be considered are:

Increased co-ordination within DEL of international activities – ICT could be one of the primary areas for activity

Skills Missions – visits to target countries to attract skilled individuals to come and work in NI. This activity should be taken forward within the context of the EURES service. EURES provides a recruitment and information service to

employers who wish to recruit in other EEA (European Economic Area) countries and Switzerland.

**Actions:**

DEL / INI meeting to agree a joint plan of action incorporating the initiatives outlined above. There should be a strong ICT sector element to the activities including

- promotion of specific forthcoming opportunities e.g. Software Professional Course September 2008.
- Participation of ICT companies in Skills Mission.
- Clear representation within NI HE/FE Brand of ICT as key strength
- Major IT focus within Invest NI ATTRACT campaign
- Usage by software companies of EURES service.

The first meeting was held in May 2008 with further meetings planned for later in the year.

### Theme 3 – Additional sources of talent

Objective	Measure	Targets	Responsibility	Cost	Progress
To increase the number of IT professionals and IT students from target countries coming to work / study in NI.	IT presence within broader initiatives	First meeting of DEL / InvestNI group by end May 08	DEL / InvestNI	Dependant on programme of activities	Completed
	Feedback from NI ICT companies	Joint programme developed by June 08			
		Launch of INI ATTRACT website (soft launch May 08)	InvestNI		Completed

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