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Department for  
**Employment  
and Learning**  
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# ICT Higher Education and Industry Workshop Recommendations

November 2008

FINAL

## INTRODUCTION

### Background

ICT (Information Communication Technology) is a priority skills sector for Northern Ireland with increasing economic significance for Northern Ireland's future prosperity. This is in recognition of the fact that as well as being a sizeable industry in its own right, it also underpins many other sectors such as financial services and healthcare.

The majority of Northern Ireland's ICT companies are software companies. In order to grow and develop, these companies need an ever increasing number of highly skilled graduates in key disciplines such as Computer Science and Software Engineering / Development. Yet enrolments in these key subjects are falling and a considerable number of those who do take up these subjects do not complete their courses of study.

For those who enroll and do complete their courses, it is important that what they are taught reflects the needs of industry in Northern Ireland.

As part of the ICT Action Plan, the Department for Employment and Learning organised a Higher Education and Industry Workshop on the 21 October 2008 to help address these particular issues. As part of this event, attendees were split into three syndicate groups, each focusing on one of the following issues:

Syndicate Group 1: Industry engagement in curriculum development

Syndicate Group 2: Student support and retention

Syndicate Group 3: Marketing and Promotion of IT courses

.This document outlines the main points and actions recommended by the groups and who is responsible for taking them forward.

The agenda for the day is attached in Annex A.

## Theme 1 – Industry engagement in curriculum development

### Aims of syndicate session

This topic is covered in Theme 1 of the ICT Action Plan – Skills Provision (relevance, quality and accessibility). The plan questions if the current ICT provision in Northern Ireland is reflective of the needs of the economy and relevant to the industry.

It was recognized that industry and providers already work together on curriculum development, but the aim of this discussion group was to review how this happens and attempt to identify ways of improving this interaction, thereby improving the match-up between skills required by industry and what is being taught.

### Discussion points

The group felt that there was a need for regular opportunities for business to ensure that the content of the courses matched the needs of employers.

There was generally a feeling that internships were a useful model for employee development. There is currently an internship programme in place in Ireland known as the ICT Ireland Undergraduate Internship Programme. It is run in association with the Higher Education Authority (HEA). It involves a two-day week placement for undergraduates in ICT degree courses over the two final years of their course.

The Computer Science A-level syllabus was seen as an issue for urgent exploration in terms of preparing future software professionals. It was felt that this did not adequately prepare the student for a computer science degree, and led to a large number of course drop-outs.

## Actions

- To investigate the practicalities of internships, as they operate in Ireland, and other work-based learning opportunities as a means of enhancing work experience during study.

[ACTION: A joint scoping exercise by Invest NI and DEL into a possible graduate internship programme to be taken forward.]

- To identify possibilities for building on existing good practice with regard to university/college - employer engagement.

[ACTION: e-skills UK to organise Higher Education/Industry Dinner – April/May 2009]

- The Department for Employment and Learning and the Department of Education to engage with the Education and Training Inspectorate (ETI) in relation to the concerns regarding the suitability of the existing ICT A level syllabus. It was felt that the current A-level provision did not accurately prepare students for a computer science degree.

[ACTION: Momentum and e-skills to liaise with the ETI and report back to ICT Future Skills Action Group (FSAG)]

## Theme 2 – Student support and retention

### Aims of syndicate session

This syndicate group also covered the issues raised in theme 1 of the Action Plan, ie, Skills Provision. Retention levels in ICT courses are lower than university averages for other full time undergraduate courses. The objective of the discussion was to identify measures to support students and improve this position.

### Discussion points

#### 1. Perception of the IT Profession

It was felt by the group that there is a need for the IT industry to engage better with those people who they hoped to attract into the industry - students, parents and careers officers - to demystify the profession. It was felt that each of these groups has a different perception of the profession.

It was also felt that there was a need to address the common misperception that ICT and Computer Science 'A' Levels were one and the same. There was a recognition that the current programmes 'Y do IT' and 'Bring IT On' would go some way to addressing this.

There is not enough awareness of maths as an integral part of programming.

### **Actions**

- **It is important for all relevant stakeholders to promote the lifestyle that the profession offers – travel, salaries, life long learning, and attempt to improve the level of understanding of computing and programming.**

- **It is also important for all stakeholders to refer to working in IT as a “Profession” rather than an industry. This will help to show a more professional image.**

**[ACTION: ICT industry are already working with e-Skills UK and Momentum to help address misperceptions as part of the ongoing ‘Bring IT On’ campaign]**

## 2. Student Support

It was noted that there was generally a high level of attrition in the first semester of Computer Science degree courses. The group agreed that this was an issue which needed to be addressed. One suggestion was to increase the level of emotional and practical support offered to these students. The support that they get at primary and secondary school is strong and there was a feeling that this level of support needed to be continued as students make the transition to tertiary education.

Contrary to the group’s initial assumptions, it appears from statistical evidence that it is not the financial support that students need as not all financial grants are taken up.

By way of endorsement, the Open University focuses strongly on mentoring and support due to the remote nature of their studying and believe that this has a positive impact on retention. Reference was also made to successes in the hospitality sector due to extended student support.

Reference was also made to the level of support offered by lecturers. It was recognised that some lecturers went above and beyond in extending support for their students while others did not consider this part of their remit.

### Actions

- **Universities and colleges need to consider the establishment of student mentoring and “buddying” as a framework for peer support.**
- **At an academic level, universities and colleges should provide support into the subject by running ‘Drop In’ programming centres. These could be hosted by post graduate students and provide additional support to get students up to grade with programming.**
- **There should be consideration from Universities and Colleges to providing additional math classes. These practices have been successful in Ireland.**
- **Universities and Colleges need to consider providing some form of a level of recognition and reward to those outstanding lecturers who went above and beyond for their students.**

**[ACTION: DEL to write to the university representatives who attended the forum to inform them of these recommended actions and request an update on the work they are currently undertaking in this area]**

### 3. Industry Engagement

The group recognised that industry needed to engage better with the student environment to enhance the quality of the learning. One recommendation to improve this was to challenge students with actual business and technical project to complete. This would improve the quality of the learning environment.

#### **Actions**

- **There should be increased industry engagements in the form of employer visits and placements.**

**[ACTION: Momentum to consider how this should be taken forward and report back to FSAG]**

## Theme 3- Marketing and promotion of IT Courses

### Aims of syndicate session

The third group was focused on issues relating to theme 2 of the Action Plan, Information and Promotion.

Providers clearly adopt a number of different approaches to marketing their courses at present. The purpose of this discussion was to find out if they are already taking additional action to market computer science / software engineering courses (given the demand for these skills and declining enrolments), how industry is engaged in this activity and to identify if more could be done involving industry and providers working in partnership.

### Discussion Points

Industry representatives in the syndicate group agreed that the key messages should be around “OPPORTUNITY” both in terms of long term career progression and variety of roles. Marketing messages needed to be differentiated according to target audience and it was seen as important to clarify entry requirements for third level courses (maths vs ICT vs Computing)

It was also felt to be essential that key audiences are identified. Target groups include: -

- Students - Social networks/viral marketing

- Parents – PR campaign and events

- Additional Talent from abroad

The group recommended the establishment of a coordinating body to identify synergies from individual marketing strategies by Universities, Colleges and industry and to take responsibility for driving and shepherding activities. It was also recommended that

communication with ICT Ireland would be important to ensuring an “all-island” response in terms of global competitiveness of the sector.

### Actions

- **It is recommended that these organisations should meet to discuss future marketing plans and possible synergies.**

**[ACTION: DEL to organise meeting]**

The outline of the workshop is included in Annex A.

The attendance of each group is included in Annex B.

The outline of the day was as follows : -

**Introductions and welcome** – Therese Rogan (facilitator)

**Opening address**- Aideen McGinley (Permanent Secretary, Department for Employment and Learning)

**The provider’s perspective** – Professor Gerry McAllister (Director HE Academy ICS Subject Network, Faculty of Computing and Engineering, University of Ulster)

**The industry perspective** – Peter Shields, Chairman of Momentum (Northern Ireland ICT Federation)

**Lessons learned elsewhere** – Kathryn Raleigh (ICT Ireland)

Pat O’Connor (Higher Education Authority, Ireland)

**Syndicate groups:**

Theme 1 – Industry engagement in curriculum development

Theme 2 – student support and retention

Theme 3- marketing and promotion

**Report back from groups by syndicate chairs**

**Q & A session**

**Workshop close**

**GROUP 1 – Industry Engagement in Curriculum Development**

John D’Arcy	ANIC
Peter Carlin	BT
Michael Crow	Fujitsu Services
Ann Doris	Queen’s University Belfast
Nigel Forbes	Northgate IS
Paula Graham	Allstate Northern Ireland
Ian Graham	Momentum
Justin Kerr	Department for Employment and Learning
Robin Lyttle	Southern Regional College
Richard Millar	University of Ulster
Derek O’Hara	Department for Employment and Learning
William C Quail	Open University in Ireland
Kathryn Raleigh	ICT Ireland
Peter Shields	Momentum
Gerry McAllister	Director HE Academy ICS Subject Network
Nuala Kerr	Department for Employment and Learning
Suzy Gray	Belfast Metropolitan College
Liam Maguire	University of Ulster
Mark Sheppard	Singularity
Mark Feeney	E-skills UK

**GROUP 2 – Marketing and Promotion**

Patrick H Corr	Queen’s University Belfast
Angela Canavan	Asidua
Michael Gould	Department for Employment and Learning
David Mawhinney	ICS Computing
Damian McGivern	University of Ulster
Ian McCormick	South Eastern Regional College
Dorothy McElwee	North West Regional College
Catherine Millar	Department for Employment and Learning

Michael Noble	Momentum
Pat O'Connor	Higher Education Authority Ireland
Dr George Redpath	CEM Systems Ltd
Gary Sloan	Open University in Ireland
Roisin Sloan	Department for Employment and Learning
Elaine M Thomas	The Open University
Colin Woods	Department for Employment and Learning
Barbara Hunter	ICS Subject Centre
Tracey Walsh	Invest NI

### **GROUP 3 – Student Support and Retention**

Sheila Fleming-Mitchell	Liberty IT
Sylvia Alexander	University of Ulster
Gavin Boyd	Department for Education
Bernadette Canavan	South Western College
Fergus Devitt	Department for Employment and Learning
Billy McClean	FIT NI
Henry McCloy	Southern Regional College
Martin McKinney	University of Ulster
Jim McNulty	ETI
Calum Morrison	North West Regional College
Nigel Payne	E-skills UK
Mark Radcliffe	E-skills UK
Kate Rice	Department for Employment and Learning HE Policy
Brian Webb	The Open University
Stephen Hagan	ICS Subject Centre
Sean Ward	Department for Education
Deirdre McGill	Department for Employment and Learning
Robert McLaughlin	South Eastern Regional College
Sian McCleave	Department for Employment and Learning