



***Meeting the needs of the
Modern Workplace through
Employment Academic Partnership***

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Publication Information

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This document is based on contributions from individuals and organisations. The principal contributors were the staff and industry partners of the members of the Roadmap for Employment–Academic Partnerships (REAP) working group, listed in the Appendix. Many other staff within the partner academic institutions and elsewhere helped to make this work possible.

The document is based on a series of case studies presented at a Seminar held in Institute of Technology Tallaght, Dublin intended to provide examples of how employers and higher education providers have worked together to develop and deliver relevant and timely education and training solutions to meet the needs of the modern workplace.

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Foreword



The Roadmap for Employment-Academic Partnerships (REAP) project draws on the outcomes and experiences of the Education in Employment Strategic Innovation Fund Cycle 1 project. It aims, through real engagement, to develop a blueprint for partnership between academia and the workplace. It is very timely in the current context, that the interaction and interface between all of the Higher Education Institutes (HEIs) and Industry is being brought into sharper focus. In particular, it is timely that the role that both the HEIs and Industry, can play in terms of improving and advancing the economy is being fully explored.

This report captures the proceedings of a REAP seminar 'Meeting the Needs of the Modern Workplace through Employment Academic Partnership' held in May 2009. The seminar was jointly facilitated by both Dublin Institute of Technology, and the Institute of Technology Tallaght. It showcased examples of how Employers, the Institutes of Technology and the Universities have worked together to develop and deliver education and training solutions to meet the needs of the modern workplace. The key learnings from each of these engagements are highlighted at the end of each contribution.

This report builds on the previous REAP report 'Learning Needs Analysis in Selected Sectors', which identified current and future learning needs in particular sectors and investigated possibilities for future engagement between third level institutions and employers.

I would like to acknowledge the work of the project team, all of the contributors and the editors in putting this report together.

I hope this report will encourage you to explore future engagements

Pat Coman
Head of Development and External Services
Institute of Technology Tallaght



Executive Summary


In today's competitive world, the Irish economy needs more people with higher level skills in the workplace. A reliance on traditional manufacturing and low-skilled services will not be sufficient for developed countries like Ireland to remain at the forefront of economic and technological advancement. Organisations across all sectors have to respond rapidly to the dynamics of their markets, which continually challenge their business models and the level and relevance of their knowledge base. As work-environments move to knowledge-based environments, with their increasingly dynamic and changing contexts, ongoing up-skilling of employees will play an essential role.

In 2006, the Irish Government introduced a Strategic Innovation Fund for projects in higher education institutions to enhance collaboration in the sector; to improve teaching and learning; to support institutional reform; to promote access and lifelong learning; and to support the development of fourth-level education. Through the Strategic Innovation Fund, the development of new strategic alliances creates new synergies and potentials for higher education systems. Through the range of initiatives it supports, the Strategic Innovation Fund (SIF) provides new impetus to the development of system-wide quality in higher education institutions. SIF is driving reform of structures and systems within and across institutions to cater for growing student numbers at all levels; for greater teaching and learning quality; to ensuring graduates are equipped for a lifetime of innovation and change in the workplace; and to enhance research and innovation capacity.

The *Roadmap for Employment–Academic Partnerships* (REAP) project is one of the initiatives funded under the second cycle of the Strategic Innovation Fund. The REAP consortium is led by Cork Institute of Technology, which coordinates the work contributed by the other members of the consortium: Athlone Institute of Technology, Dublin Institute of Technology, Institute of Technology Sligo, Institute of Technology Tallaght, National University of Ireland Galway, University College Cork, and Waterford Institute of Technology. The REAP consortium proposes to change the nature of the relationship between the education provider and the workplace, by developing a model of cooperation and partnership that recognises and values the needs and contributions of the worker and identifies the workplace as a centre of learning.

This report showcases the range and types of engagement that Higher Education Institutions (HEIs) currently have with Industry in relation to specialised course development. These engagements range from those that have been led by Industry to those initiated within the HEIs. Examples of industry led interaction include the Graduate Induction Programme for Abbott Diagnostics described by Athlone Institute of Technology, the BestNet Skillnet described by the National University of Ireland Galway (NUIG) and the Print Skillnet described by Dublin Institute of Technology. Other engagements highlight the opportunities for Higher Education Institutes to initiate engagement with industry through developing training programmes that target a large number of SME's as described by Waterford Institute of Technology, target large players in a specific sector as described by Cork Institute of Technology and Institute of Technology Tallaght and distance learning provision as described by University College Cork and Institute of Technology Sligo.

Key learning points have been identified and presented from each of the case studies and are summarised below.



From an Academic Institution perspective

- Specialist Targeted Courses (STC) development raises the profile of the Institution and it locates the Institution by association with the particular sector involved.
- Opportunities peripheral to the course arise from the relationship e.g. work-placement, feed-back on what is actually happening in Industry, research opportunities and improved possibilities of support for funding applications.
- Industry facilitates access for individuals who would not normally consider higher education options but who, with the right kind of progression opportunities available can attain an award. This impacts, not only on the individual, but on their family and friends also.
- Keeps Higher Institutes provision current and relevant through ongoing dialogue and improved mutual understanding with industry.

From an Industry perspective

- Employers are partners in the development of programmes that are relevant to their particular needs.
- Supports competitiveness by underpinning Industry training strategies when STCs are linked to a continuous professional development programme that provides progression routes.
- Provides access to expertise and research at all levels but in particular at Level 9 and Level 10.
- Contributes to satisfaction and retention as part of personal development planning.

The report highlights examples of current excellent engagements between Higher Education Institutions and Industry. It provides insights into the opportunities and challenges such engagements present to both parties. The contributions provide useful case studies that can be used to inform and stimulate future successful engagement.



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Introduction

Background

Approximately 1.4 million of the current Irish workforce should still be in the labour force in 2020, but changes in technology and business processes will have rendered many of their skills obsolete by then (Forfás, 2007a). Changing employment patterns in the organisation of work practices have impacted on the demand for higher level skills. Employees are expected to be more flexible, to have a broader range of skills and to be better able to manage their own career development. Graduate-level skills and qualifications are seen as increasingly important in the changing workplace. The Forfás Expert Group on Future Skills Needs proposes a vision of Ireland in 2020 in which a well-educated and highly skilled population contributes optimally to a competitive, innovation-driven, knowledge-based, participative, and inclusive economy. The Expert Group suggests that, if Ireland is to realise this vision of a new knowledge economy which can compete effectively in the global market place, the country requires a resident population with enhanced skills, increased participation in the workforce, and greater third-level participation (Forfás, 2007a).

Progress in integrating lifelong learning into mainstream education and training systems in Ireland, however, has been relatively slow. The Irish participation rate in lifelong learning of 9.7% is well below that of the top ranked state, Sweden, at 34.2% (Forfás 2004). Organisations endeavouring to develop their knowledge base and to engage with higher education institutions face a confusing array of schemes. The existing arrangement of programmes and schemes is not sufficient to deliver the target skills-profile set out by the Expert Group on Future Skills Needs. If that is to be achieved, a number of innovative programmes need to be undertaken which should foster a culture of lifelong learning. The education sector needs to proactively facilitate and simplify the engagement process with industry partners. Developments must be informed by an understanding of needs and opportunities, by region and by sector. The need for workplace innovation and the transformation of the concept of work from the use of previously acquired but quite static skills into continuous and dynamic learning is now widely accepted as essential for the Ireland of the future.

A number of recent reports have identified a gap in understanding and differing priorities between the training providers and potential client organisations and individuals. The Enterprise Strategy Group's report *Ahead of the Curve* (2004), for example, emphasises the need for education providers to engage with employers and to take a proactive role in fostering and supporting industry-based research and development. The report presents challenges necessary for an adaptive and responsive higher education sector, including the requirement to:

- be flexible and adaptive to the needs of students and enterprises;
- be creative and innovative in delivery methods;
- facilitate mobility of staff in both directions between academia and the various workplaces

Forfás (2005) also outlines an ambitious vision for the Irish workplace of the future and presents a set of recommendations that include:

- A continuous learning and development facility that enables individuals to identify and assimilate knowledge, skills, and abilities acquired in different contexts;

- Detailed *regional* assessment of changing technology trends and skill requirements as a basis for regional growth to inform and support proactive collaboration between industry and the third-level education sector.

More recently, Forfás (2007a) suggests that:

- Universities and, in particular, Institutes of Technology will have to deliver flexible, market-driven solutions. This will require these institutions to tap into market trends and to develop improved linkages with potential customers;
- There is a need to develop ways of capturing data on skills needs at a regional and sectoral level and to feed it back to education and training providers;

Several themes emerge from the above reports:




There must, therefore, be genuine dialogue between third-level education institutions, training providers, and those seeking learning, reflecting the view expressed by the Industrial Development Authority (2005): "Global competition requires a collaborative, national team effort in which all key stakeholders actively contribute and assume their respective responsibilities to deliver on our shared national vision".

Strategic Innovation Fund Aims and Objectives

The Strategic Innovation Fund (SIF) is provided by the Department of Education and Science and is administered by the Higher Education Authority (HEA). SIF is a competitively-driven resource stream aimed at stimulating organizational reform. The fund is multi-annual, amounting to €510 million over the period 2006-2013. SIF aims to support innovation, and to foster collaboration between institutions competing for funding to:

- Incentivise and reward internal restructuring and reform efforts
- Promote teaching and learning reforms, including enhanced teaching methods, programme



restructuring at third and fourth level, modularisation and e-learning

- Support quality improvement initiatives aimed at excellence; promote access, transfer, and progression, and incentivise stronger inter-institutional collaboration in the development and delivery of programmes
- Provide for improved performance management systems and meet staff-training and support requirements, associated with the reform of structures and the implementation of new processes
- Implement improved management information systems

Through the collaborative nature of the projects, new strategic alliances have been developed and supported, providing new impetus for enhanced quality and effectiveness. The *OECD Review of Higher Education in Ireland* made a compelling case for reform of third- and fourth-level education in Ireland (OECD, 2004). While the sector is acknowledged as an engine for economic development, higher education institutions need to rise to the challenges of increasing their relevance, for example, through promoting access and participation by those already in the workforce. SIF is an important element in the investment in, and reform of, higher education institutions to enable them to meet challenges presented by changing social and economic realities while building on their existing strengths. In this way, the projects funded through the Strategic Innovation Fund should improve the learning experience for a diverse range of learners at all levels.

Two of the projects funded through the Strategic Innovation Fund, and led by Cork Institute of Technology, focus on the 'non-traditional' student. Recent growth in non-traditional student numbers and demands for up-skilling and upgrading qualifications is increasing the pressure on third-level institutions to provide efficient user-friendly routes to qualifications. These two projects emphasise the importance of lifelong learning and place significant emphasis on continuing professional development and up-skilling of the workforce in partnership with employers.

The CIT-led *Education in Employment* project, funded under the Strategic Innovation Fund Cycle 1, is a consortium comprising Athlone Institute of Technology, Dublin Institute of Technology, Dundalk Institute of Technology, Galway-Mayo Institute of Technology, Institute of Technology Sligo, Letterkenny Institute of Technology, National University of Ireland Galway, and University College Cork. The *Education in Employment* consortium is promoting a model of education development, delivery, support, and assessment - based on a number of underlying principles:

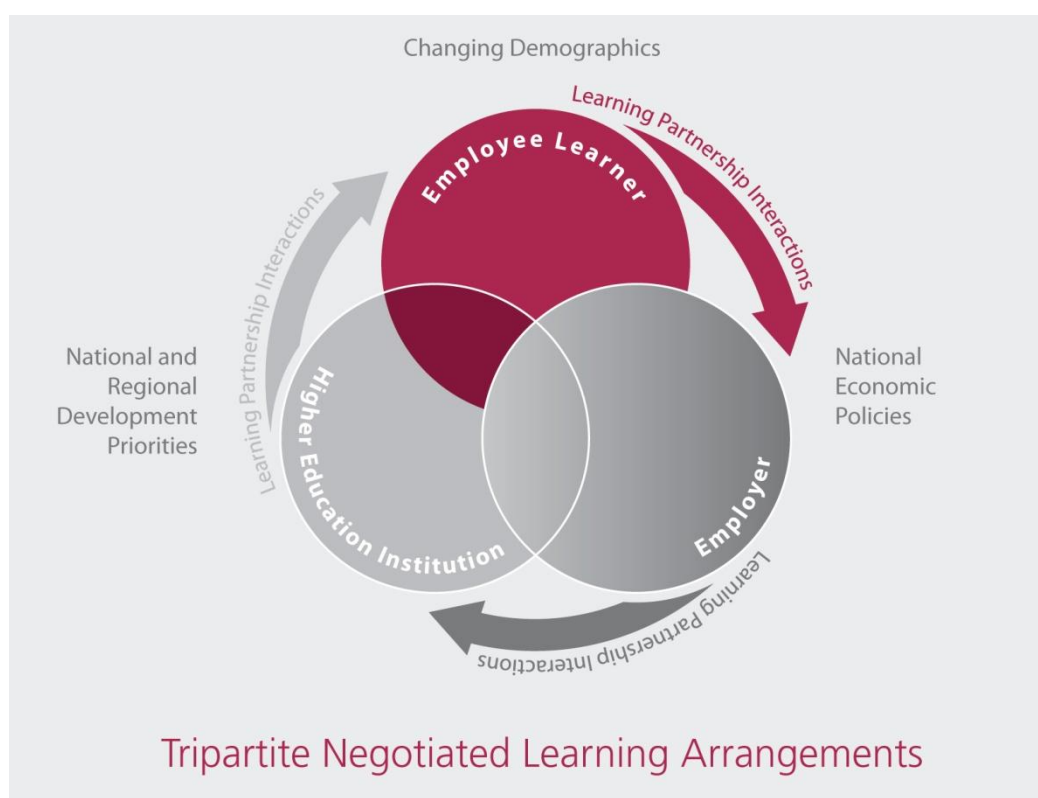
- Learning (as a process rather than an event) is at the centre of the provision
- Learning (formal, non-formal and informal) must be assessed and accredited
- The workplace can constitute a rich learning environment, and work-based learning should be integrated into learning programmes
- A sustainable partnership between education and the workplace is necessary for the development, delivery, support, and assessment of 'education in employment'

The *Education in Employment* project began by investigating the work-place education partnerships already existing in each of the collaborating third-level institutions. By initially establishing the existing arrangements and the types of learning offered to workplaces a number of challenges were identified and some good practices were brought to the fore and shared. As a result of the work partners in the *Education in Employment* consortium were able to either (i) establish a new partnership, or (ii) build on the goodwill with an existing partner, and in turn develop the partnership on a more established and formal level. The work of the *Education in Employment* project, was shared through reports and events and the REAP project was in a position to develop the partnership concept across a broader spectrum of engagement.

Roadmap for Employment–Academic Partnerships (REAP)

The Roadmap for Employment-Academic Partnerships (REAP) Project

The REAP project is a Strategic Innovation Fund Cycle 2 collaborative project aimed at developing and validating a model and roadmap for partnership and engagement between higher education institutions (HEI) and employers and enterprises. This partnership approach is seen as especially relevant in the context of a dynamically changing economic and demographic environment.



The partnership concept is extended beyond that of the learning partnership. By exploring existing examples of good practice throughout the project consortium and identifying enablers and barriers, a toolkit will be developed to facilitate engagement across the spectrum of potential partnership activities. The impact will be twofold - both HEIs and enterprises will be encouraged to seek out opportunities to engage and to identify any barriers to engagement within their systems and processes. Through the REAP project it is intended that enterprises will view HEIs as key service providers and strategic partners.

The Seminar on which this publication is based was an opportunity to investigate existing learning partnerships between Higher Education Institutions and employers or organisations. The examples were not selected as the 'best' or the most established examples of learning engagement and they are a very small sample of the variety of innovative and flexible arrangements that are in place. These are shared as an opportunity for the consortium to learn through our experiences. In benefiting from the experiences of others it was as important to share the negative outcomes or challenges as the successes. Ultimately these shared experiences will allow the REAP project consortium to draw up a framework which will guide and inform the development of new partnerships and programmes.



Graduate Employee Induction Programme:-

Developed by AIT/AIDD for Abbott Diagnostics in Longford

Carol O'Donnell and Paul Tomkins

Abstract

This paper is a retrospective analysis of an industry academia partnership that was forged between Athlone Institute of Technology (AIT) and Abbott Ireland Diagnostics Division (AIDD) in Longford. The benefits for all stakeholders are discussed. Through the learning partnership AIDD gained access to trainers (lecturers) with expertise in many fields of science and to suitable training for graduate level employees destined to work at the new AIDD facility. The simulation laboratory built at AIT was used for the practical portion of new employee training and was intended to be maintained after the project ended as a laboratory facility for AIT researchers. The building of a new diagnostic facility in the Midlands region represents an opportunity for AIT students both from the perspective of placements during their undergraduate training and employment and research and development opportunities. In addition, researchers at AIT have formed collaborative links with AIDD Longford. The training programme represents a successful interaction between industry and academia. However, it is worth examining this partnership to understand some of the issues that can arise when an academic institute is challenged to meet the pace and demands of industry.

Introduction

Abbott Ireland Diagnostics Division (AIDD) formed a collaborative partnership with Athlone Institute of Technology (AIT) and Institute of Technology Sligo (ITS) for the training of new employees due to the transfer of new technologies from Abbott plants in the United States. AIDD were expanding the Sligo plant and building a new diagnostics facility in Longford. This discussion focuses on AIT's role in the training programme for new employees at AIDD in Longford.

The purpose of the training programme was to provide induction and intensive training for scientific services staff. The initial trainees would be the employees hired to start up all aspects of manufacturing and testing at the new Abbott plant. All employees held BSc Degrees at a minimum with many having doctoral level qualifications. From the Abbott perspective, they came to Ireland for several reasons including the availability of a well-educated work-force and the Irish government incentives to locate manufacturing here. This translated into an expansion of the Abbott Sligo plant and, as a result of negotiations with the IDA, the creation of a new facility in Longford.

The Atlas project, as it was known, was promoted as "bridging the world, building our future" and represented an element in a total investment of €115m. The project purpose was to transfer the skills and knowledge of manufacturing diagnostic products from Abbott in the United States to the AIDD Sligo and Longford plants in Ireland. The project was directed by Chuck McGinn in the Abbott Chicago plant. An extensive induction and

training programme was put together for new employees. AIDD were then of the view that technology transfer, product quality and future development, would be facilitated by recruitment of highly qualified graduates, with the majority of senior positions being reserved for PhDs. This model has since changed as most manufacturing companies, lacking local integrated R&D, have difficulty retaining PhD graduates.

Initially both Institute of Technology Sligo (ITS) and AIT were involved in discussions with AIDD regarding developing specifically tailored training modules. Understandably from AIDD's perspective, there would be a substantial cost involved in the training of new employees and so they were very involved in every aspect, particularly in the content of what the Trainers were delivering. It was important to AIDD to ensure their objectives were met and adhered to¹. A budget was allocated to establish a physical simulation laboratory at each IT for training staff with generic skills and utilisation of proprietary technologies. The School of Science in AIT adopted a training delivery model dependent on the recruitment of four experienced dedicated staff, with the longer term objective of creating an Industry Training Centre in the School.

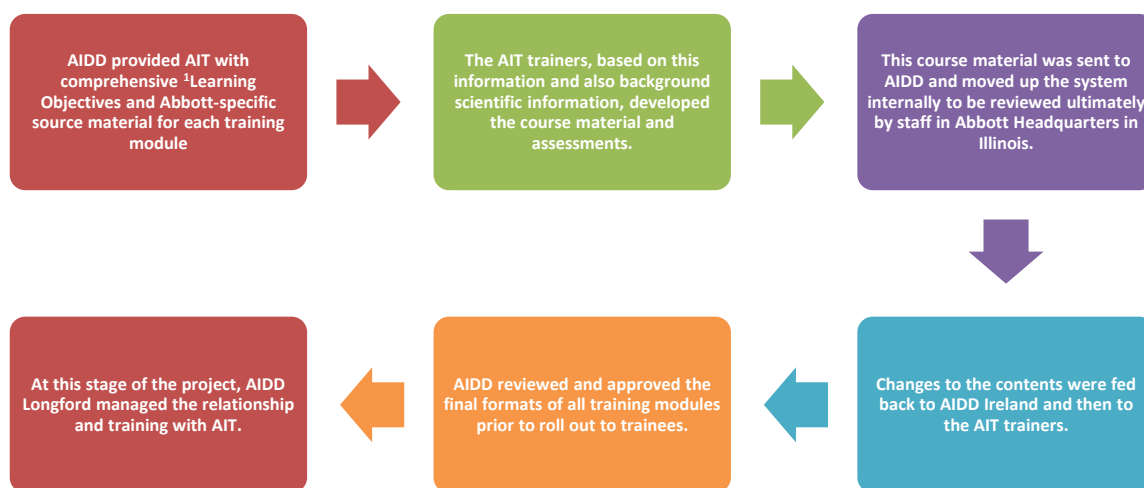


Figure 1: AIT Employee Induction Training Delivery Model



Figure 2. Image of the new facility built in Longford. AIDD Longford manufactures a total of 27 diagnostic reagent products in an ISO9001: 2000 certified environment.

¹The Learning Objectives reflected the key concepts that all trainees should know at the end of their training.

Diagnostic reagents are components of diagnostic tests that are widely used in hospital laboratories or other commercial testing laboratories. At its most basic, an immunodiagnostic test is often the test that is ordered when a doctor takes a blood or urine sample from a patient. The sample will be sent to a local hospital or other commercial testing laboratory. The laboratory will put the patient sample into an autoanalyser machine that will carry out the specific test the doctor has ordered. It will be analysed in addition to many other blood samples that are being tested at the same time.

A common type of diagnostic assay used in the Abbott analysers is the immunoassay. Immunoassays generally detect antibody or antigen levels in a patient sample. This means that the reagents are biological products and biological products have to be handled much more carefully than traditional pharmaceuticals which are chemically synthesised. This requires that the employees have an understanding of the nature of proteins and how to handle them in a Good Manufacturing Practice (GMP) setting.

AIDD Longford makes the reagents and solutions that are required for automated analysers. The importance of a reliable result from these machines is transparent. Thus, the reagents used in these tests have to be manufactured reliably. Employees manufacturing these reagents need to be appropriately trained and qualified. The client needs to have confidence that the test is going to yield a reliable result. AIDD's product portfolio includes diagnostic kits for Thyroid Function, Fertility and Pregnancy, Cardiology and Metabolic markers as well as Therapeutic Drug Monitoring.

Initially the training function was located in AIT. New employees/new hires would first go through a company induction and orientation programme. There was approximately four weeks of classroom-based learning with the AIT trainers. As is apparent from Table I, the training was divided into discrete modules. The employee's understanding of the material was assessed for each module. After that the 'hands on' or practical training portion was conducted in the simulated labs at AIT. This aspect of the employee training was also assessed. AIDD were very interactive and ensured that what AIT delivered fulfilled their objectives.

Initially whilst the construction of the Longford facility was ongoing the training was delivered at AIT in lecture rooms and the simulation laboratories. After the facility was completed in Longford, AIDD moved the training on-site. Table 1 shows a monthly training timetable. Initially, the training was too intensive and too tiring. So "shadow with buddy" days were included that allowed trainees an opportunity to interact with trained staff on the job and to gain some of the learning through experience.

Time	Monday	Tuesday 01	Wednesday 02	Thursday 03	Friday 04
9.00 - 1.00pm AM		Orientation	Abbott Product Overview	Protein Chemistry	Protein Chemistry
1.00 - 5.00pm PM		Orientation	Shadow with Buddy	Protein Chemistry	Protein Chemistry
	Monday 7th	Tuesday 8th	Wednesday 9th	Thursday 10th	Friday 11th
9.00 - 1.00pm AM	Aseptic Technique	Prerequisite Training	Immunology D1	Volumetric Measures	Immunology D2
1.00 - 5.00pm PM		Shadow with Buddy	Immunology D1	Volumetric Measures	Immunology D2
	Monday 14th	Tuesday 15th	Wednesday 16th	Thursday 17th	Friday 18th
9.00 - 1.00pm AM	Shadow with Buddy	GMP/GLP	Validation	Use of BSC/CAC	Cleaning/Decont
1.00 - 5.00pm PM	Shadow with Buddy		Labelling	Use of BSC/CAC	Cleaning/Decont
	Monday 21	Tuesday 22	Wednesday 23	Thursday 24	Friday 25
9.00 - 1.00pm	Buddy Day	Statistical Process Control	Specification Development Not for DT's	Induction	Induction
1.00 - 5.00pm					
	Monday 28	Tuesday 29	Wednesday 30		
9.00 - 5.00pm	Design of Experiments				

Table I. Example of training timetable

The two types of employee that were specifically trained were known as Technical Specialists and Diagnostic Technologists. The Technical Specialists were PhD level staff and Figure 3 indicates the training schedule for these employees, which continued for almost 6 months. In the first month the introductory modules were delivered. Many of these modules encompassed basic scientific training. Others covered specific aspects of working in a GMP environment. Yet other modules covered AIDD-specific issues in the manufacture of diagnostics. In the second month, they moved into the simulated labs and started more specialised training in technical skills and utilisation of AIDD proprietary technologies. Beyond that, many of the first wave of employees at Longford were sent abroad to Abbott sites in other countries for product specific training.

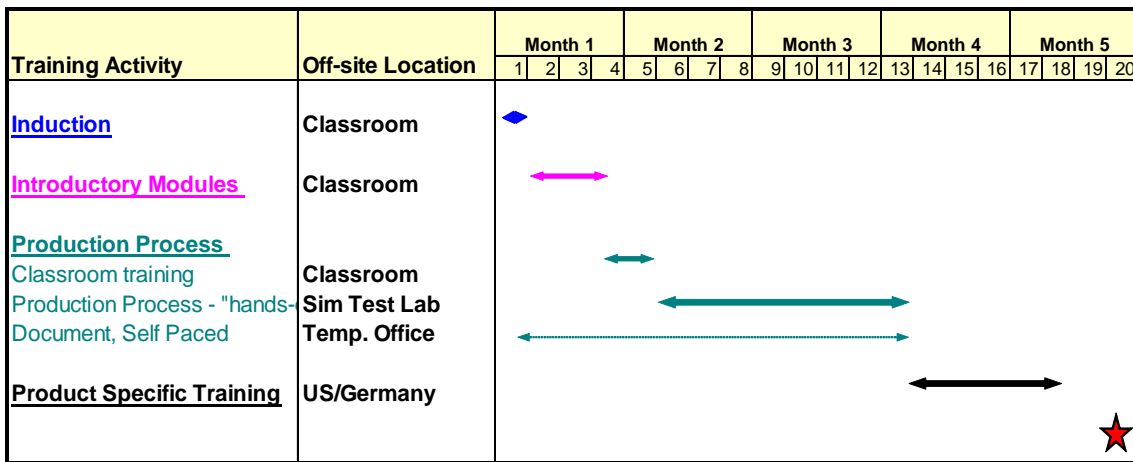


Figure 3. Generic training timeline for a Technical Specialist

Similarly the BSc level graduates, who were hired as Diagnostic Technologists, had a training programme that lasted approximately 5 months, Figure 4. They were also in the classroom for the first month but did not complete as many modules as the Technical Specialists. They also had a shorter training period in the simulation labs, but again, it was intensive training.

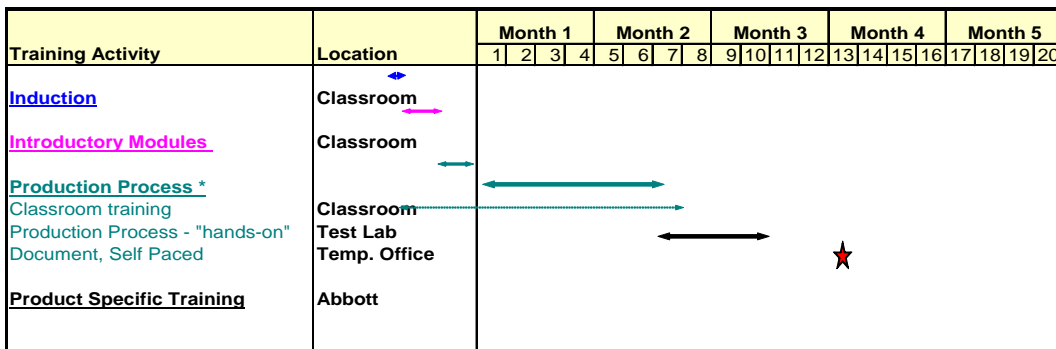


Figure 4. Generic training timeline for a Diagnostic Technologist

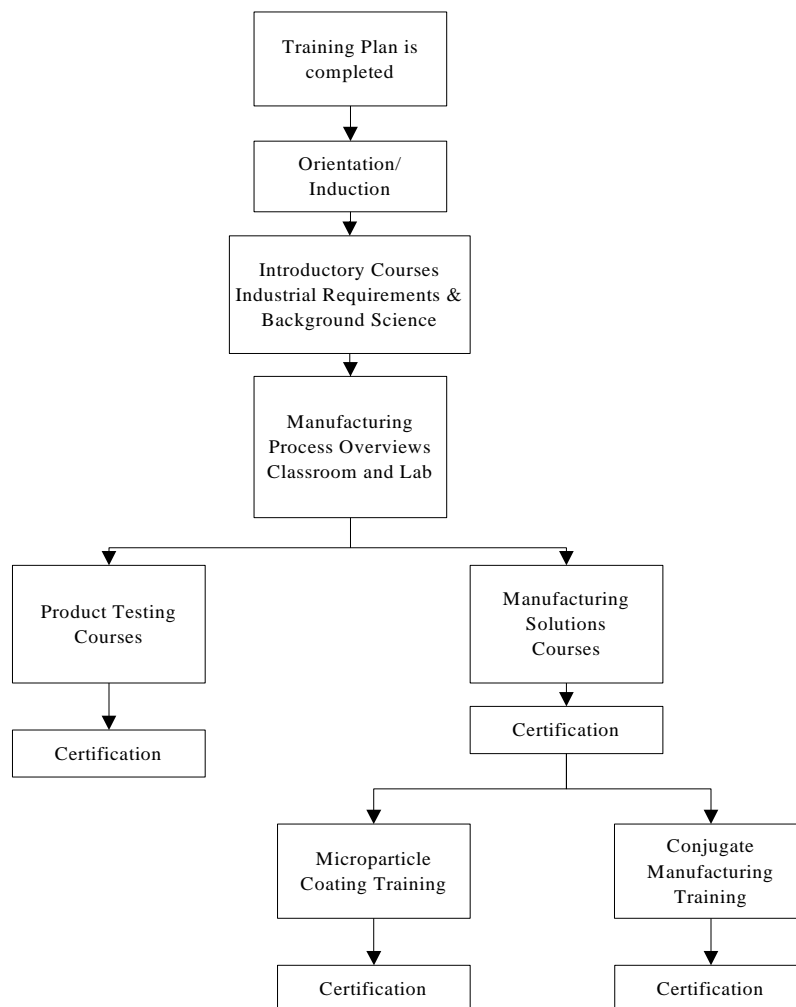


Figure 5. Employee training plan and corporate certification of training in specific product areas

The trainee's learning and understanding was evaluated during and after completion of individual modules. The assessment methodologies varied depending on the knowledge, skill and competence being assessed.

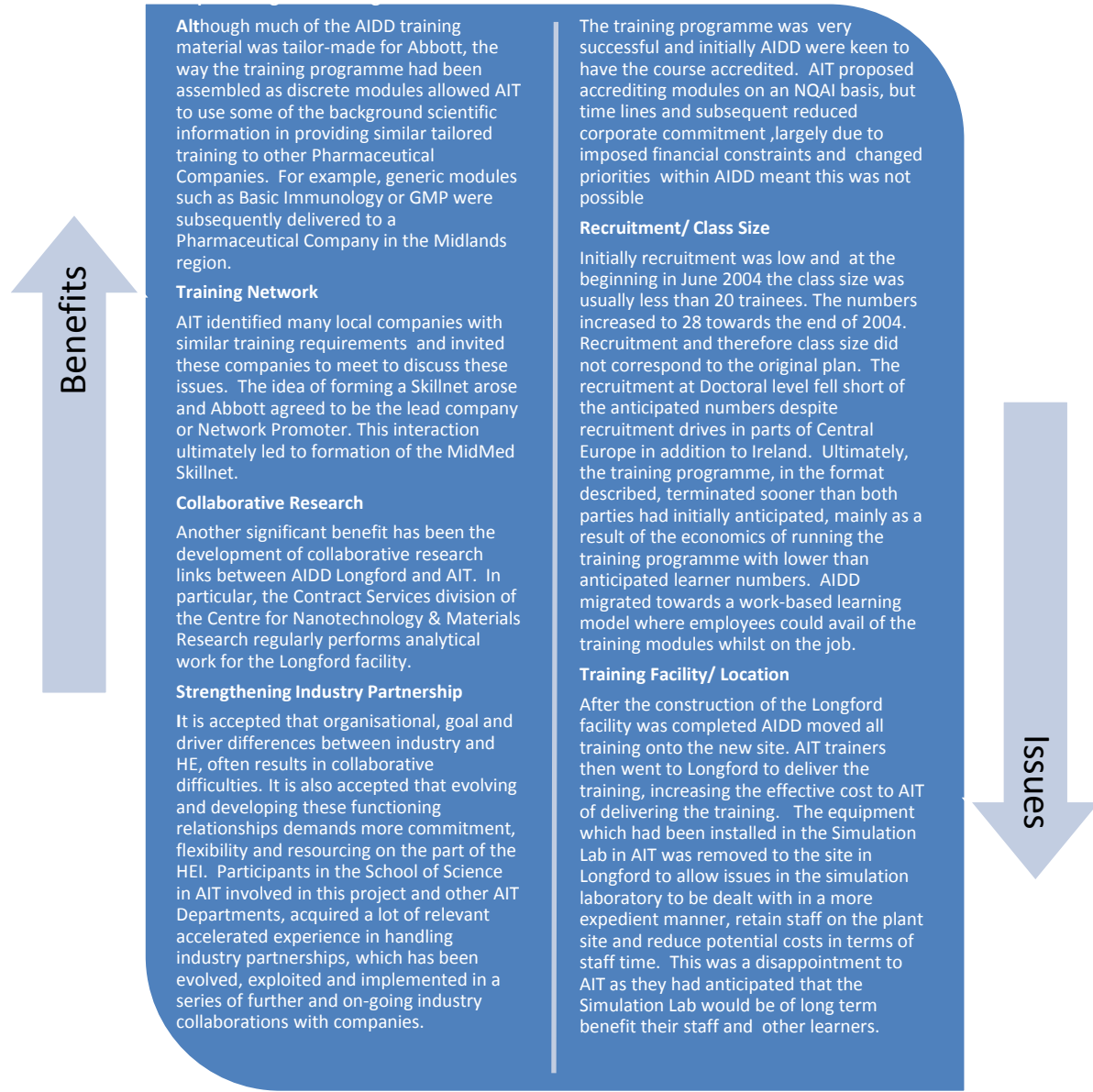


Figure 6: Benefits and Issues arising from AIT/AIDD collaboration

Key Learning

- HEI commitment, flexibility and resources are vital elements in developing and managing successful relationships with external organisations
- Development of a training provision relationship with an external organisation can act as a catalyst for new opportunities with other organisations and in other areas of activity including research, programme development and work placement
- Organisational and cultural differences between HEIs and Industry can present challenges to collaboration



Distillation Short Course :-

Developed by CIT and targeted at the Chemical Industry.

Cilian Ó Súilleabháin

Abstract

Cork Institute of Technology offers a four-year, full time degree course in Chemical and Biopharmaceutical Engineering. Initially established in 1979 in response to a local demand for chemical engineers who were educated to degree level, the course is accredited by both The Institution of Chemical Engineers and Engineers Ireland (formerly the Institution of Engineers of Ireland). The delivery and content of the current incarnation of the program are heavily influenced by industry colleagues and many graduates have reached senior levels of leadership both in industry and in the wider business world.

The department's close links with industry have prompted a clear understanding of the need to present relevance and application in the teaching of fundamentals. Staff have significant industrial experience, and this has resulted in an integration of this experience into teaching. The execution of the final year design project is conducted in the context of project procedures. The capstone project in final year is regularly undertaken in conjunction with one of CIT's industrial partners.

This particular offering was developed based on a combination of existing industry-relevant expertise, within the academic staff of the department, and an understanding of a niche need within the local and national industry sector. Having identified the need and developed the distillation programme initially, it was offered to a large cross section of the Chemical and related industries. Subsequently, Pfizer Ringaskiddy identified the programme as a key learning need for their operators and engineers and the programme offering was tailored specifically for that particular organisation. The programme has been run over 12 times in 5 years.

When delivering to a learner group from a particular organisation the material can be tailored to be specific to the processes of that particular organisation so it represents a flexible fit within a particular organisation's training and development plan.

In the normal delivery format the course is delivered over two days to small class groups (max 7 people) with lectures, discussion groups and tutorials. The programme is a mixture of theoretical and practical elements with hands on use of equipment and opportunities to verify and compare theoretical and practical findings.


The programme is supported by a learning manual and some independent learning is expected before and during the programme with an assessment stage at the end.

Introduction

Aims

The CIT Initial aims were:

- To improve industry partnership contacts,
- To improve opportunities for research and development collaboration

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- To support student work placements
 - To contribute to the relevance of course development and delivery to undergraduate students
 - To generate income for the Institution and the Department

Unique Selling Points

The Chemical Engineering Department has a long history of engagement with the Chemical and Pharmaceutical industry based in the Cork area. In developing relevant and accessible learning opportunities the following points are very important:

- Experienced Chemical Engineers – combining industrial experience with excellent teaching skills
- Well-equipped Teaching Laboratories and facilities including distillation column
- Good understanding of the chemical industry learning needs and identification of distillation as a key process
- Process-based programme avoids confidentiality issues that might be associated with Product-based – allows for broad transferability of programme

In designing and developing the programme for the target group the development team looked to match the strengths of the Chemical Engineering Department; teaching experience, professional chemical engineering skills, staff with industrial experience, laboratories including pilot scale equipment, with the needs of the target market. The obvious target market was the chemical industry which employs 24,000 people directly, many of whom are based in Cork.

Course Outline

The course included a treatment of theoretical elements and basic engineering principles such as energy balances, distillation theory and specific issues relating to the employer in question. There was also a significant practical element allowing experimental readings to be obtained and analysed.

- Mass balances and energy balances
- Vapour liquid equilibrium
- Distillation theory (minimal numbers)
- Lab session – pilot scale distillation
- Design of distillation columns
- Distillation Applications in the particular organisation
- Assessment and Examination

The Department of Chemical Engineering is equipped with a 20ft glass distillation column. This was of great interest to those who worked full-time with distillation columns as they are able to see the distillation process as it is happening.

Organisation

In structuring the programme the team was very aware of the need for flexibility and reliability to meet the varying learning needs within the workplace. The programme was typically delivered by an experienced team of five with good interchangeability between team members ensuring continuity on the programme in the event that a

team member becomes unavailable. The learning sequence was arranged with the student in mind to ensure a coherent learning experience. Some thought was also given to the learning environment to ensure that the experience was as positive as possible.

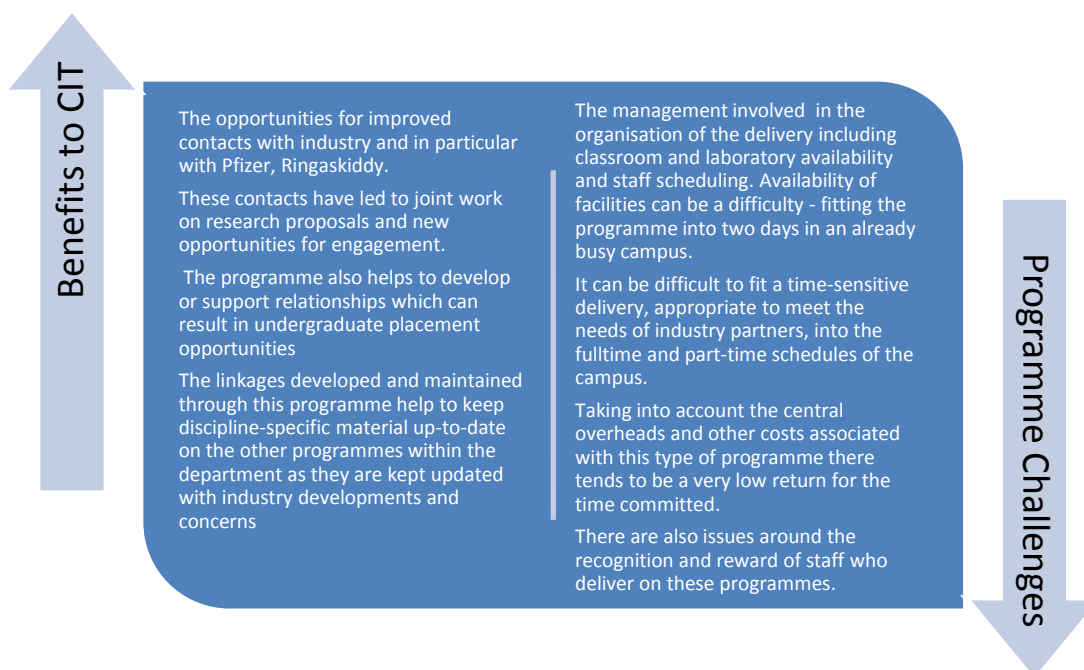


Figure 1: Benefits and challenges for CIT in managing and delivering distillation course

Industry Feedback

- The demand for the programme has been maintained
- The programme is updated as agreed in conjunction with the industry partner
- The programme is attended by engineers and chemists as well as operators
- The applied focus of the programme and the practical elements are particularly well-received
- The facilities – particularly the glass distillation column – are very impressive

Benefits to Pfizer

- Course designed by CIT with Industry-specific site input to achieve a tailored course
- Balance of theory and practice suitable to recipients
- Course held away from the site in a learning environment but local at the same time.
- CIT open to changing content and format based on feedback and in partnership with the company
- Delivery schedule negotiated with the industry to suit shift patterns etc.

In general the feedback from the company was very positive – their staff had access to a flexible negotiated learning opportunity to meet their very specific learning needs.

Feedback from the participants was also positive with the balance of theory and practice being particularly appreciated. Interestingly the company and the learners welcomed the fact that the programme was an on-campus location.

Probably the most significant element of the programme from a Pfizer perspective was the openness to re-negotiating and customizing content. Pfizer could potentially have delivered the material themselves – but found CIT to be an efficient use of training time and resources and provided access to facilities.



Accreditation and Validation

As the course was not accredited, it has been an unusual industry-focused learning interaction for CIT. This may have resulted from the fact that the course team had encountered delays and difficulties in the accreditation process in the past as much as from the fact that the customer did not seek accreditation.

Teething Problems

There were teething problems and lessons learnt from the early stages of the engagement – these led to an adjustment both of content and of approach.

Some attendees were in a classroom environment for the first time in 10 or 20 years, particularly with the issue of an assessment at the end. Other attendees were very highly qualified, including those with PhDs. It was quite a mixture and the delivery needed to ensure that all of the various learning outcomes were met by a very diverse cohort of learners.

Key Learning

- Students on a commercial course have high expectations regarding presentation and delivery – this can have a positive impact on the standards throughout the department and institution for all students
- The real information attained from a plant can feed back into lectures and practical elements for all students
- This hands-on company engagement helps in securing work placements for undergraduate students
- The interaction also offers research opportunities and data for research and analysis
- There are significant administrative obstacles to be overcome in the organisation and operation of such courses
- With small numbers on the course, the viability can be an issue
- It is very difficult to reward staff adequately for the time and effort involved in short industry-focused courses



Diploma in Credit Union Studies:-

Developed by UCC

Olive McCarthy

Abstract

The Diploma in Credit Union Studies has been offered by University College Cork since 1991. The development of the programme was initially funded by the Irish League of Credit Unions. It is a successful example of industry-academia partnership in the development of tailored education for credit union personnel. The Diploma is run on a distance-learning basis using a blended learning approach which combines text-based modules with distance learning lectures in regional venues. This enables students, combining family and work commitments, to study at their own pace, when and where it suits them. Assessment is by means of both exams and continuous assessment. Student feedback on the opportunities the Diploma has presented, as well as on the outcomes of the programme for their own development and capacity building, has been extremely positive.

Introduction

The Diploma in Credit Union Studies is designed for people with experience in credit unions, as employees or as volunteers. There have been over 780 graduates to date, equally representing credit union employees and credit union volunteers including board members and committee members, from both small and large credit unions in urban and rural areas. The mixture of backgrounds, ages, educational qualifications, motivations and ambitions is an ideal basis for the generation of new ideas which benefit the students as individuals, their respective credit unions, and indeed, the movement as a whole.

The Diploma is offered on a distance learning basis which gives students the flexibility that is not available from traditional classroom based learning. Distance Learning caters specifically for students who, due to work or other commitments, are unable to attend formal structured lectures or classes. The materials are text-based packages known as Modules, which differ from normal textbooks in that they contain space for working, and test the student's understanding throughout.

Situated at Level 7 on the National Framework of Qualifications, the Diploma comprises the equivalent of the first year of a three year Level 8 BSc degree in Mutual and Credit Union Business. Progression to a Level 9 Masters degree by e-learning is also an option. The Diploma is designed to develop a critical awareness of the distinctive nature of credit union organisations and their role in promoting socio-economic development at community level. It also aims to develop further the knowledge and abilities of credit union personnel, so that at organisational and individual levels, they can more efficiently organise and manage credit unions.

The main areas covered in the diploma are:

- a. Credit union background, history and development, and relationships with other types of co-operatives
- b. Ethos which shapes their structure and management
- c. Basic management and interpersonal skills
- d. Training and practice in the conduct of research
- e. Credit union placement



Origins of the Diploma – an industry-academia partnership approach

The Diploma in Credit Union Studies was launched as a direct result of a perceived need for a third level qualification for credit union personnel identified in the Planning Committee Report as adopted by the Irish League of Credit Unions (ILCU) at its 1991 Special General Meeting. Established links between the Centre for Co-operative Studies at UCC and the ILCU were built upon to investigate the feasibility of developing a programme of studies. A steering committee, combining two academic and six industry partners was formed to design and oversee the development of the Diploma. It was agreed that a distance learning approach would best suit the diverse locations of the target audience. This meant that the course materials had to be developed in advance of the programme being offered, unlike more traditional on-campus programmes where materials can be developed week on week. This, of course, incurs significant up-front costs, long before student fees are paid.

The ILCU agreed to fund the start-up costs of the Diploma programme by way of an interest-free loan. This loan was repaid to the ILCU in full as students enrolled in the programme and fee income was generated. Since then, the relationship between UCC and the ILCU has continued to flourish, with the development of the BSc in Mutual and Credit Union Business and the MBS in Co-operative and Social Enterprise, as progression routes from the Diploma, also being funded through ILCU grant assistance.

The steering committee also advised on programme content, ensuring that the content was both relevant and timely for credit union personnel, and of an academic standard to merit university accreditation.

Mode of delivery and assessment

The duration of the Diploma programme can be one or two years, depending on the availability of the learner. It is delivered using a blended approach to distance learning. Text-based modules are combined with regional distance learning lectures. There is a requirement for independent learning by the student in advance of the lectures. Normally, the modules roll out every 6 weeks and each module has one lecture on a Saturday.

The venues for the regional distance learning lectures are determined according to the most central geographical locations for groups of ten to fifteen students. To date, venues have included Cork, Limerick, Ennis, Galway, north and south Dublin city and county, various locations in Northern Ireland, and Loughborough in the UK. In many cases, the local credit union provides its training facilities as the lecture venue.

Nine of twelve modules have an assignment worth 40% of the total mark available and an exam worth 60% of the mark available. Both assignment and exam require students to apply the theory in the modules to their own practice in credit unions. This helps them to contextualise and evaluate their practice and to explore possible lessons learned for the future. The remaining three modules are assessed by means of continuous assessment, including an optional Placement Module which gives students the opportunity to spend time examining practice in another credit union, either in Ireland or abroad. Assessment is by means of a learning log of their experiences and learning while on placement.

The in-built Summer School module involves students coming to UCC for one week in early summer when the more traditional student body has completed their study for the year and facilities are more freely available. Along with academic lectures and workshops, the Summer School introduces the students to life on campus in the University and they have the opportunity to meet the students from other regional groups around the country.

Most of the students have either full time jobs or small children or elderly parents or voluntary commitments, or some combination of all of these. The distance learning approach gives them the opportunity to learn at their own pace. They can read the module text or write their assignment while waiting in the car for their children to come out of school, or after their children go to bed, or on their lunch break, and so on. In other words, they can study when best suits them, as opposed to the structured 9am to 5pm on campus situation faced by most traditional students. This has its advantages and disadvantages. It can be isolating for people to work on their own, but this is often overcome by the lecturing system, where the students come together and start to share their experiences. Students are also encouraged to set up study groups amongst themselves to meet and stay in contact with one another. Flexibility around different student needs is extremely important although it is not always easy to be flexible within a university structure.

Feedback on the programme

Student uptake on the programme has been very diverse and feedback has been extremely positive. Some of this feedback features below. Students tend to find that they can balance work and family commitments with studying for a third level qualification much better through a distance learning approach. Networking has been another extremely important, albeit secondary outcome of the programme. Students have found that through the Diploma they have built up a network of contacts in other credit unions that can be drawn on when help or advice is needed. And of course, lasting friendships (including a few marriages!) have also resulted.

Student Feedback:

It was a great opportunity to gain a 3rd level qualification. The experience was enriching.

I felt a great sense of personal achievement on completing the course.

It was an opportunity to interact with others and to acquire knowledge on the background, ethos and philosophy of the Credit Union movement.


The return to studying and writing assignments was challenging.

The taste of college life in microcosm makes me understand the buzz that 3rd level students enjoy today.

Challenges




Figure 2: Challenges for UCC in providing Credit Union Programme



Key Learning

- Distance learning, using a blended learning approach is an ideal vehicle for enabling people of all ages and backgrounds to access third level education.
- Industry-academia partnerships in designing and developing educational programmes are ideal in ensuring the relevance and timeliness of programme content.
- Flexibility in programme design and delivery are essential to the effective running of a programme aimed at distance learning students.
- The outcomes of these kinds of programmes are not confined solely to academic learning and capacity-building. On-going networking is seen by participants as an important secondary outcome.



A Critical Course Review: A Case Study on the Central Theme of Stakeholder Experiences of a Continuing Professional Development Programme at the Dublin Institute of Technology

Dr. Kevin P Byrne and Lorcaín Ó hÓbáin.

Abstract

Continuing Professional Development or CPD is becoming more important to organisations such as DIT. Anecdotally there are many reasons for this; however the prime one is the closeness of DIT to certain industry sectors. In this instance it relates to the relationship DIT and its personnel have with the printing and packaging sector in Ireland. The personal relationships are equally important, as it is somewhat a small sector with approximately 19,500 persons employed in it.

DIT are also the sole providers of third level education for the sector and it has traditionally been the deliverer of craft-based training with a reputation stretching back almost one hundred years. The Department of Print & Digital Media (formerly the School of Printing) is a small department employing predominately technical experts and a diminishing number of print and general management specialists. Traditionally all qualified and certified crafts persons in the sector and a limited number of managers would have qualified from the various programmes delivered in the department.

Because of our closeness with industry we were often the first point of contact in meeting any emerging training needs, however over the years the department had 'lost its edge' according some industry critics and commentators. Some restructuring within the Institute and the appointment of a new Head of Department in 2008 saw the development of a relationship with the Skillnets network.

This case study demonstrates clearly how people and relationships can facilitate processes and developments and overcome potential bureaucratic hurdles.

Scope

The purpose of this paper is to examine stakeholder experiences, i.e. those between the commissioning body and the developer and deliverer. In this instance the organisations are the Department of Print & Digital Media, Dublin Institute of Technology and Print and Packaging Industry Skillnet. In addition to the relationship of the corporate entities, the underlying relationship and reputation of the persons named above shall also be considered.

Methodology

This will be considered from a critical realist (Sellars, 1916) perspective as both authors follow this doctrine in their respective areas of research.



Research Methods

Case Method (Yin, 2003) shall be applied in this instance as the case allows the critical cycles of Yin's (2003) evaluation model to be considered. The ideology of insider research (Ezzy, 2002) is also satisfied following this method.

The Printing and Packaging Sector in Ireland

The printing and packaging sector in Ireland is an indigenous traditional industrial sector. Currently it employs approximately 19,500 persons (www.cso.ie). Of the 740 participant firms (www.cso.ie) it is broadly segmented in to the following sectors.

- General Commercial
- Information Technology (IT)
- Education
- Packaging

The packaging sector is sub-segmented into food, IT and label producers.

The sector is one which experiences on-going technological change and embraces this with some comfort. There has however been a trend over the last twenty years to shift the focus from pure manufacturing to service oriented, solutions providers.

In conjunction with the morphemic there has been a clear shift in the role and task orientation of personnel operating in the sector. This is one which has clearly shifted from craft to services. The sector has traditionally been supported with a craft-training provider, however, there has been a tendency for firms to hire customer services personnel directly from school or college and as such process appreciation has been absent from the core skills of new incumbents.

Education for the Sector

Craft and Bachelor level education has traditionally been delivered at DIT. The School of Printing was established in 1911 and has earned the status of 'centre of excellence' for craft based training practices.

Until 2006 there were various crafts delivered and certified by the State training agency FÁS, as separate entities. These crafts were:

- printer
- originator
- bookbinder
- carton maker

In 2006 there was a decision reached with a strong recommendation from the Print and Packaging Industry Forum to consolidate all four trades in to a singular entity and classify it as the Craft of Print Media. This amalgamation had many clear advantages including the elimination of previous lines of demarcation, which were experienced by many firms.



Delivery Context

Up until 2005, there was an undergraduate Bachelor level programme from which industry drew administrative staff and junior managers. A decision was made to close entry to the programme and its final graduates were expected to exit in June 2009. No substitute programme was allowed until 2010. This created an already substantial knowledge gap, particularly in the area of technical awareness and appreciation from a managerial perspective. It is also the case in the sector that a firm technical understanding must be present to conduct the role effectively even in areas such as customer support.

The Print and Packaging Industry Skillnet regularly assess and survey their members on learning needs. It is by nature 'enterprise-led'. The response was, in this instance, a need for a short technical appreciation programme, which would allow participants understand the 'workflow' of the production cycle and its interaction with client service and the business requirements. The target audience was therefore

(a) Administrative persons in the sector with little or no technical knowledge of the printing and packaging production processes

and

(b) New entrants to the sector wishing to gain an insight in to the technical issues that may affect their role in the organisation.

Having identified the particular learning need the Skillnet sought assistance from the Department of Print & Digital Media at DIT. After a brief discussion it was agreed that the programme should be four days in duration and cover a broad area with a central project to be completed during the four phases of the process – i.e Administration and Coordination, Pre-Press, Press and Post-Press.


The workplan for the four days is summarized as:

- overview of workflow, industry value chain, including a macro-economic view of key sector statistics. Mix of lecture and interactive discussion incorporating experience of some attendees.
- hands-on pre-press including an introduction to design software, output choice incorporating quality control. Integrating with a central project – personal letterhead
- hands-on press workshop including an introduction to inking systems, dampening systems, feeder devices incorporating quality control. Integrating with a central project – personal letterhead
- hands-on post-press workshop including an introduction to mechanised print finishing, folding systems, magazine production and book production. Integrating with a central project – personal letterhead

In relation to the deliverers there was a pre-requisite by the Skillnets that the programme would be delivered to the highest standards by the most experienced lecturers in the respective areas.

Accreditation and Validation

When the Skillnets were originally established, there was a focus on training specifically. As the funding of the initiative developed into its second round, there was a clear directive issued in relation to validation and accreditation to the National Framework of Qualifications. DIT employs the mechanism for short course validation under a quality assured process and this is conducted at Faculty level. The Q1(b) form is the application form and it requires minimal information however it covers in detail matter which could affect the



quality of delivery. In the Faculty of Applied Arts there is also a short course committee that assesses this Q1(b) prior to its submission to Faculty Board. This group assesses all submissions thoroughly and ensures that any observations are fed back to the proposer for consideration or amendment before the document is presented for Faculty approval.

In tandem with this application a costing model must be applied to each short course to ensure that full cost recovery is achieved as well as a small contribution to profit. There are 2 sources of costing model. The first is a faculty-based model, which has a substantial contribution to overhead. This high cost model, if followed, makes DIT unattractive to external agencies when they are searching for a training provider as the cost becomes unrealistic and prohibitive. In the context of training it would require the minimum of 16 candidates to attend the programme for break-even to be achieved. A more dynamic model is available from the Professional Services office at DIT. This addresses cost recovery and ensures that the Institute is more attractive in fulfilling its vocational education mandate. This model allied with the interventions provided by the Skillnet allowed the programme to become feasible financially.

On validation it was agreed that the programme would attract 5 European Credits Transfer System Points (ECTS) on HETAC level 6, and that it should be called 'Introduction to Printing Technology'. This entire process including validation was completed in a three week timeframe and was seamless according to the both DIT and the Skillnet.

Key Success Factors

There were four key success factors identified as part of this process and the outcomes of the training interventions experienced.

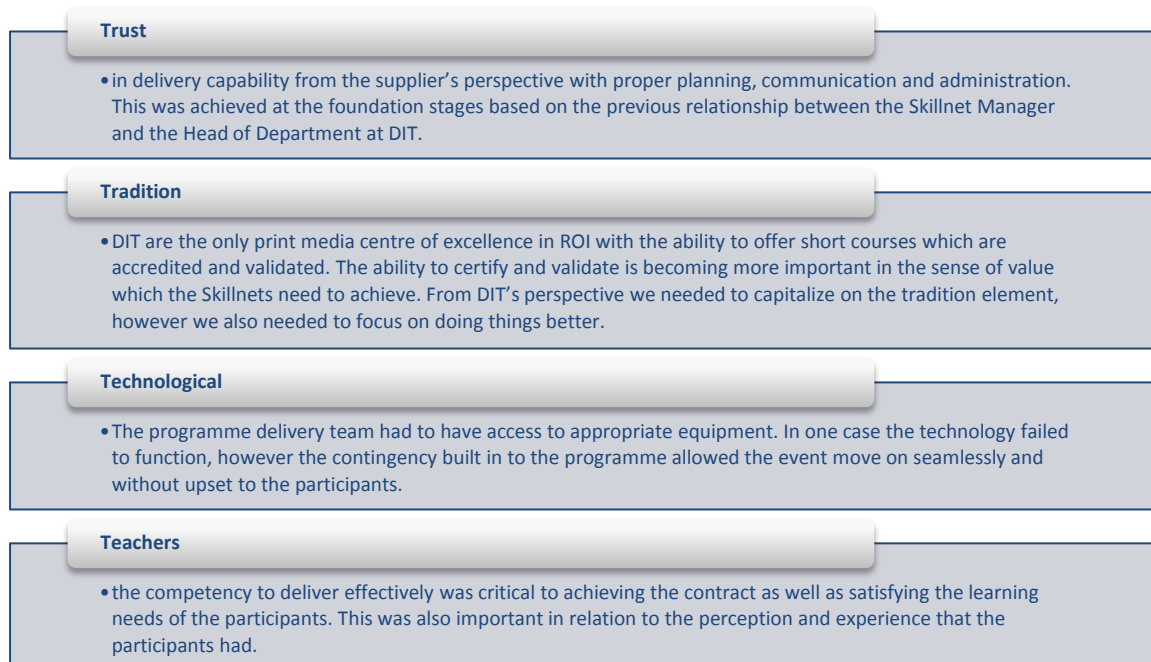



Figure 1: Key Success Factors CPD Interventions

The success was measured in DIT being asked to develop and deliver a Diploma for the Skillnets. From the experience of both parties, in relation to the pilot four-day programme, the uptake for the Diploma was much stronger with fourteen participants. This Diploma is set to have its second intake in 2010 and also see its first



graduates. The relationship and trust between the Skillnets Manager and Head of Department at DIT were critical to the initial discussions. The dynamism of the Q1(b)- process aided the responsiveness of the Head of Department to the process.

Recommendations

DIT needs to reassess its overhead contribution to ensure that it is competitive in the CPD market place. The current overhead creates a clearly uncompetitive base.

Relationships need to be nurtured and trust needs to be created to ensure programme success and longevity.

Key Learning – by DIT

- From the perspective of DIT, there was the pressure from the outset to be perceived to be proactive in relation to the development of a programme of the highest standards.
- Although the programme was only four days in duration, there was the minimum of ten days preparation. This did not include curriculum development and validation.
- This was also a clear opportunity for DIT to showcase its abilities in the development and delivery of courses of this nature. If successful it could result in additional programmes. The inhibitors to this success were potentially external factors- i.e. the diversity of experience and capability of the participants and the demands this placed on curriculum development to satisfy the various participants.
- Success was achieved in most instances. The feedback process, which is completed at the end of all Skillnets courses, highlighted overall satisfaction. There were recommendations arising in relation to the allocation of time between the three technology areas.
- In relation to the physical resource, one critical output device failed to operate, however there was a contingency, which appeared to reduce the impact. In addition to this the participants were still able to complete all stages of the workflow.

Key Learning – by Skillnets

- The Skillnets programme fund is developed for ‘employer- or industry-led’ training interventions. The need for a programme of this nature was identified through surveys of Skillnets participant firms. It was also modeled on a similar programme, which is delivered in the United Kingdom however the curriculum was developed with an Irish sector participant in mind.
- The relationship with DIT was driven from the point that facilities and subject matter experts were present. The tradition and previous poor perceived performance from DIT in relation to technology had to be overcome and this programme was used as a trial to evaluate the possibility for future relationships and developments.
- It was also envisaged that this programme could, if successful pave the way for a CPD level 7 Diploma.



Providing Flexible Pathways for Healthcare Industry Employees and Others – Induction Training through to Masters Qualifications:- ITT Dublin

Miriam O’Donoghue and Adrienne Fleming

Abstract

ITT Dublin has for many years strived to work with and increase its involvement with industry. This is done through a variety of different offerings in an academic environment. The ladder of qualifications provides the backbone for any of the collaborations with industry partners. This framework begins at a competence level where the students/trainees/employees receive an attendance certificate for competence achieved in particular learning outcomes. ITT Dublin encourages industry to use this as the first step on the ladder to formal accredited qualifications. The next stages in this ladder strategy are single subject certification, minor and special purpose awards, Higher Certificates, Degrees, Post Graduate Diplomas and Masters Qualifications.


Keeping such partnerships with industry alive involves a degree of flexibility in the delivery of the courses and modules. It also requires the Institute to keep up-to-date with current industry trends and to listen to their needs with respect to graduate courses and also in-company training courses. The ability of ITT Dublin to provide, not just the theory aspect on these industry driven courses, but also a focused practical component helps to achieve the learning outcomes through a variety of learning styles.

The National Pharmaceutical Education Centre (NPEC) housed at ITT Dublin allows for the combination of learning styles and exposure to technology. NPEC pilot plant contains small scale equipment similar to that which is to be found in Chemical Synthesis Plants, Finished Dosage formulations plants, Aseptic filling Operations and Biotechnology facilities. Here the students get hands on experience with the equipment in a quasi-Good Manufacturing Practice (GMP) environment where learning is achieved by carrying out the operations and through problem solving exercises. Through its collaborations with the pharmaceutical industry, ITT Dublin has developed industry specific courses and delivered programs both on campus and on site in industry which are tailor made to suit the company’s training/education needs.

Introduction

ITT Dublin was established in 1992 on its current campus site in Tallaght, West Dublin. Since January 1993 the institute has been an independent third level institute under the Regional Technical Institutes Act. It received its delegated authority for taught programme four years ago and this was followed closely by its delegated authority for research levels 9 and 10.

In 2000, the Institute of Technology Tallaght received funding from the National Development Plan for the establishment of an integrated pilot scale Pharmaceutical Technology facility, designed with a strong emphasis on the support of teaching, training, research and development and industrial applications. The centre was



formally opened by the then Táiniste Ms. Mary Harney in April 2002. The facility enables ITT Dublin to provide a new and innovative approach to science education where the traditional sciences are combined with learning on industrial scale manufacturing equipment. The pharmaceutical centre is a modern 5000 square foot facility in the Department of Science on the ITT Dublin campus.

This national centre of excellence includes resources for training in the following areas:

- Biopress Technology
- Bench Top to Kilo Lab scale for API
- Pilot Plant - Mixing and Formulating
- Pharmaceutical Finishing and Packaging
- Process Automation
- Water Purification and Waste Management

The centre has been developed to appropriate regulatory standards and is an ideal location for education and research programs. The centre constitutes an important national resource for the development of graduates trained to manage the expanding pharmaceutical manufacturing industry in Ireland. It also provides a centre for the development of staff currently employed in the industry by offering nationally recognised qualifications and through organising focused workshops and company specific training.

Meeting Industry Needs with Education and Training

The National Pharmaceutical Education Centre provides ITT Dublin with a valuable resource which can be used to meet the training and education needs of the pharmaceutical industry. The Department of Science at ITT Dublin has also actively recruited individuals with both the highest level of academic qualifications and a depth of industrial experience. This pool of knowledge spreads over many of the key areas in the industry including but not limited to Good Manufacturing Practice, aseptic and clean room environments, purification and downstream processing, product development, technology transfer and validation, biotechnology, Chemical API Synthesis and finished product formulation. This allows the Department to bring theoretical concepts and practical knowledge together and give examples and case studies to the students which they can directly relate to their work places. There is also a need to keep these skills up-to-date and to keep in touch with industry.

Having a satisfied customer is ultimately about understanding their needs and supplying a service that meets those needs. With this goal in mind staff members are associated with organisations such as ISPE and PDA. The group also facilitates conferences on topics of interest to the industry. Regular meetings are held with industry representatives where there is an exchange of ideas, including their needs with respect to undergraduate, post graduate and competence training. This allows for the updating of course material and also helps to meet the requirements of the customer on an on-going basis.

ITT Dublin's client list goes some way to show that industry needs are being met by the products and services it provides. Clients range from Medical Device companies to Biotech, to chemical synthesis and formulation. Also the location of these companies is not just from the Dublin hinterland but also from Cork and Waterford. The list includes such companies as Pfizer (Wyeth), J&J companies (Janssen and Centocor), Genzyme, Takeda, BD Medical, BMS and MSD. Time and time again these client companies return for further customised programs, single subject certified modules and indeed in some cases full programs delivered to their staff in blended modes, Face to Face and distance mode with tutorials.

ITT Dublin aims to show companies a method by which, with slight addition and adjustment, the training/education can be accredited and therefore be accumulated. In this respect it is not training for

training sake and the student/trainee doesn't end up with a large folder full of independently certified module components that cannot be added together to an award. In collaboration with its industry partners, ITT Dublin is aware of their individual training needs on a particular topic and while including these in a prescribed course also suggests the addition of topics or subject material which will bring the content into line with modules already delivered and accredited by the college. Showing both companies and individuals a pathway to a qualification which can be taken in small steps, the first of which may already have been taken, gives them the encouragement needed to return to education. Figure 1 below illustrates a ladder education path for the GMP/Technology program.

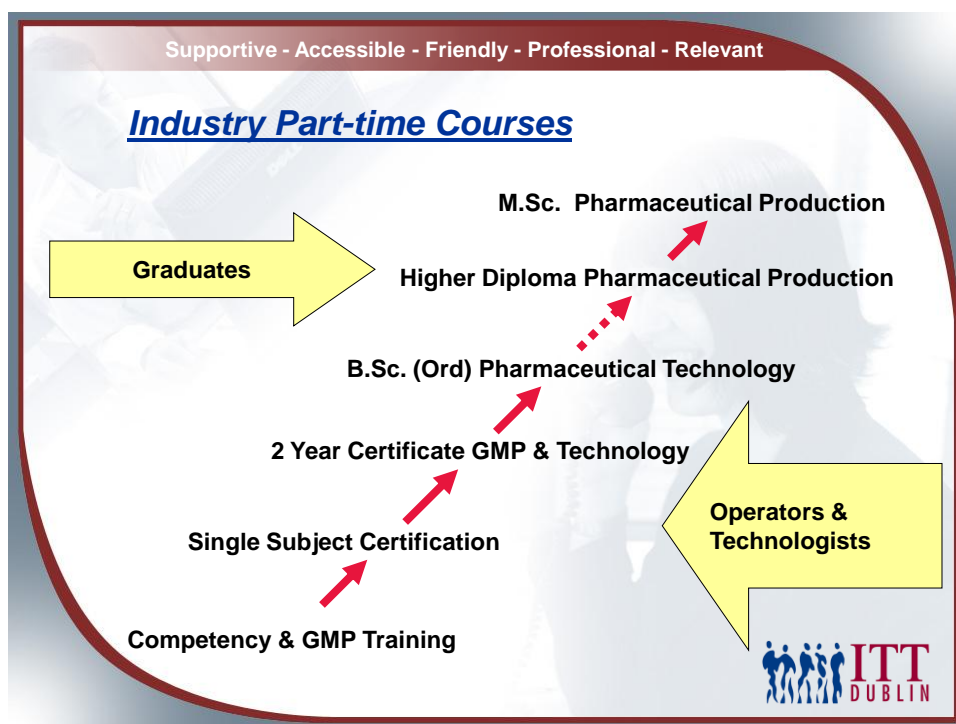


Figure 1 Ladder of progression for Pharmaceutical Industry Courses.

With entry points for all levels of employed this allows people to cross train, up-skill or re-skill themselves in this particular area. Training can be a narrowly focused program leading to high proficiency in a specific skill. It prepares a trainee for a particular job or activity but may not provide a broad perspective or flexibility of approach. However if the background knowledge or education is provided as part of the training then the resulting trainee will be equipped with a broad understanding which will aid in problem solving and a scientific approach to their work. Through providing different learning environments and meeting the needs of the different learning types then education and training can be achieved simultaneously within the academic institution as it has the appropriate equipment and facilities or access to them to simulate an industrial environment.

ITT Dublin can use a blended approach to course delivery and assessment. Course material is delivered over the web in combination with e-lessons, supplementary material and assessments. Courses can be delivered in on-line, classroom, blended or customized modes. Courses are designed to improve the student's ability to learn and to establish a solid foundation in lifelong learning practices - essential performance enhancing skills in a continually changing technological world. Modules can be delivered in-company and / or on-site at NPEC. They can be tailored to suit a company's requirements with customised course design, development and delivery also taking place.



The Wyeth Case Study

ITT Dublin has partnered with many companies on a variety of interesting projects. One in particular shows the ability of a good relationship with a company leading to their return to the organisation which can repeatedly meet their needs. Wyeth established its Biopharmaceutical campus in Grangecastle in 2001-2003. At its peak in the startup phase it employed approx 1700 people. ITT Dublin facilitated the orientation training for production operators during this startup phase. Over a two year period it trained/educated approx 800 employees on a three/five week induction course in areas such as Biology, Clean Room Management, Contamination Control, Maths and Manufacturing and Process Technology. Some of these trainees subsequently went on to take the institutes full Higher Certificate in Science GMP/Tech receiving credit for the work already done in their company's induction course.

The collaboration did not end there. Over the next number of years many of their employees came back to ITT Dublin to continue education to Degree and Masters level. Also individuals from that organisation moved to other companies and they subsequently came to ITT Dublin for training and education. As with many organisations their needs changed with time and in 2008 their Laboratory group came to Tallaght to discuss an opportunity of putting together a certificate course which could be done in part time mode to give the necessary education and skill set to individuals wishing to work in a laboratory setting.

A working group with representatives from ITT Dublin and Wyeth Biopharma designed a course to meet this need with the following design objectives:

- To produce well-qualified analysts for effective employment
- To equip graduates with the necessary foundations and flexibility for further personal development through education
 - Addressing the required knowledge, skills and competencies
 - Provide learning contexts based on scientific issues and problems typical of the workplace
- To create sustainable paths for career and personal development for junior analysts working in industry
 - Advancement and development through a balance of education, training and work experience
 - Progression routes towards B.Sc. level awards
 - Ability to engage effectively in lifelong learning opportunities
- To support company training and retention initiatives in the analytical science arena

Figure 2: Design objectives for Laboratory Certificate Course

Following the necessary quality procedures and approval by the various review boards the course began with its first intake of students two years ago. Again this program fits the ladder module described earlier.

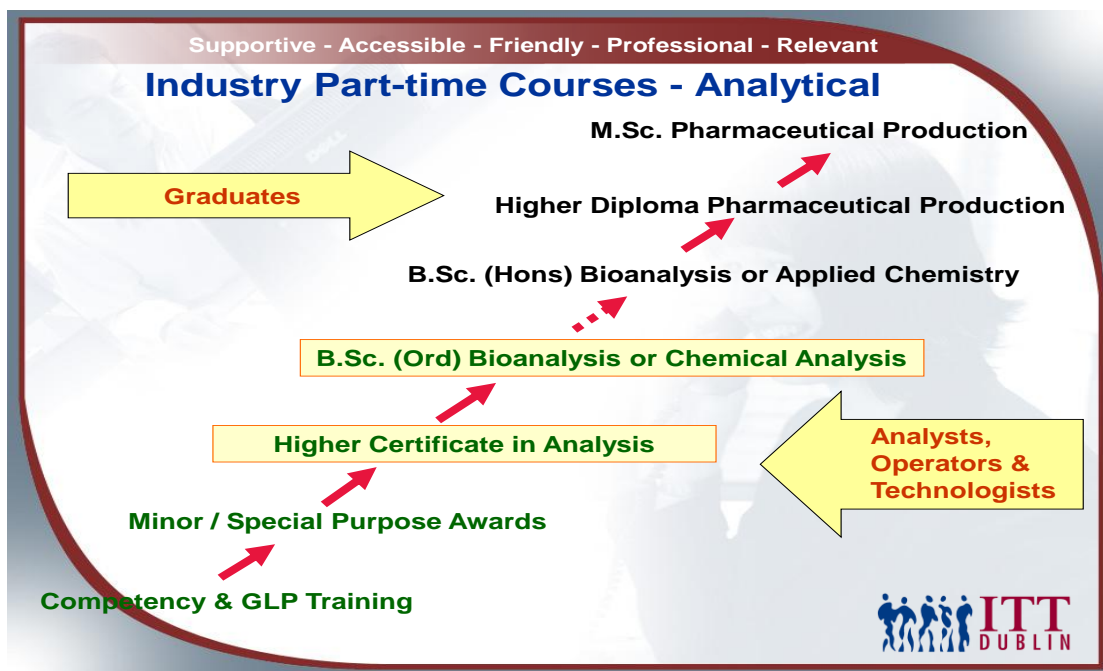


Figure 3 Ladder of progression for Analytical Industry Courses.

The delivery of this course is again inclusive of the different delivery modes. As a part-time programme of education & training program, it is delivered over 4 years (2 academic semesters per year), approximately 10 hours per week of class contact time. This includes one evening plus one day per week and involves the In-class instruction – lecture and laboratory, directed self-learning and blended distance learning. It has proved popular, with other companies taking up the opportunity of educating their staff by joining the course.

Conclusion

It has been the experience of ITT Dublin that the Pharmaceutical industry is more than willing to engage with academia to provide an education and training pathway for their employees. The key to success of such ventures is flexibility of delivery and adaptability without loss of content of approved modules to fit the needs of the client company.

Key Learning

- Course development modules should be designed to be flexible and adaptable.
- Ensure all course material and staff are up-to-date with the latest topics and trends.
- Delivery of the modules needs to be flexible and to incorporate different learning styles.



The Development and Delivery of Laser Technology Courses in an Industry led Training Network:-

NUI Galway

Fiona Parker

Abstract

This presentation covers some background information on the National Centre for Laser Applications (NCLA) within NUI Galway and what it offers to industry both locally and nationally. The NCLA carried out an analysis of industry's training needs, visiting a number of industries with a set questionnaire and a list of potential technical courses they could offer. From this analysis came a link with a number of local medical companies who together were successful in applying for a SWkillnets training grant through the BestNet network to undertake specific technical courses in the NCLA.

The presentation also details the training undertaken by the NCLA during 2008 – a total of 11 courses delivered with 108 trainees from 13 different companies. These courses are a mixture of classroom and practical lab work. These courses had input from industry at their development stage to ensure they covered the most essential aspects from industry's perspectives. In addition, 3 individual companies worked very closely with the NCLA to further develop the laser safety course to ensure it fulfilled their specific requirements for their staff.

The NCLA looked for feedback from each course delivered and the general perceptions from the trainees were that the courses were very useful and the practical elements probably the most valuable. Employer feedback is also very positive, especially for the customised courses. Again the practical elements proved a strong winner.


From the NCLA perspective, it can be difficult to engage with industry on general training course development but there will always be those companies willing to collaborate on customised courses.

The NCLA is looking at FETAC level 5 or 6 awards as the most appropriate for accreditation of the training courses offered and are awaiting approval from FETAC.

In conclusion, the NCLA is finding that companies are looking for more customisation, on-site training and accreditation. It was somewhat more difficult to fill the places in 2009, the reason for this is not clear but overall the technical courses seem to be meeting industry's needs.

Introduction

The NCLA was established in 1989 and its activity was to promote the use of lasers in Irish industry. The core activities are in laser materials processing. The fundamental research carried out by our Masters and Doctoral students tends to be at some remove from the applied activities. There is also a heavy involvement in proprietary technologies and commercialisation. The NCLA receives significant funding from the Enterprise Ireland Commercialisation Fund and works on a number of projects in conjunction with industry. These projects would be seeking commercial results – maybe patents or licences to companies and can also result in potential start-up companies.



The outreach and networking aspect of the work is very important in ensuring that there is good knowledge about the latest trends in laser processing within the industry sectors. The NCLA works closely with other research institutes in collaborations and emerging technologies and with industry partners in offering applied research and development and training services.

From an applied R&D point of view because of the range of different types of lasers and powers available the NCLA is able to test and identify viable solutions for companies.

In terms of training one of the most important services offered is the laser safety courses that have been run for over a decade. In these training programmes we address the issues of eye and skin safety that are relevant to all laser users in a wide variety of applications. In more recent times we have also developed technical training solutions.

In developing these training options the first steps were to carry out a training needs analysis with manufacturing industry which uses laser based processes. These include medical device industry where lasers are used to stem cut, they use catheter polymer welding and the aerospace industry where lasers are used to drill holes in turbine engines.

Out of this training needs analysis, which involved 17 companies, came a link with a few companies that needed similar types of training. And from this Abbott set up a list of companies, including Boston Scientific, Bosch and Lomb, who were part of the network and they applied for a Skillnets training grant.

The training grant application was successful and they set up a Bestnet network which is Bio Medical Engineering and Science Training Network and they received the funding through Skillnets. Within the Bestnet network there is a partnership of about 60 different companies who have identified their training needs in Bio medical, science, lasers and optics. Within this network the NCLA provides most of the laser training, which is subsidized, and the NCLA gets access to these 60 member companies in offering the training opportunities through the network.

In 2008 11 laser technology training courses were delivered to 108 trainees from 13 different companies. The training courses included Laser Safety in the Workplace and the 2 new courses – Basics of Laser System Engineering and Laser Technology and Applications which were the first delivered in 2008. The courses were run in the NCLA mainly and open to all companies. However courses were also available for on-site delivery and in customized formats.

The Laser Safety in the Workplace is a one day course. It is predominately classroom based but includes a tour of facilities and a practical demonstration of some of the safety features. Basics of Laser System Engineering is also a one-day course – the morning is spent in the classroom and the afternoon on practicals in the Labs. Laser Technology and Applications is a three-day course. It has more technical content and aimed at engineers and people wanting to know what the different systems are capable of and how they could use them. This again is heavily practical based.

Through detailed interaction with a number of key partner companies the NCLA has customized some of the programmes as required and delivered safety programmes relating to the specific on-site equipment and uses.

Stages in Training Option Development

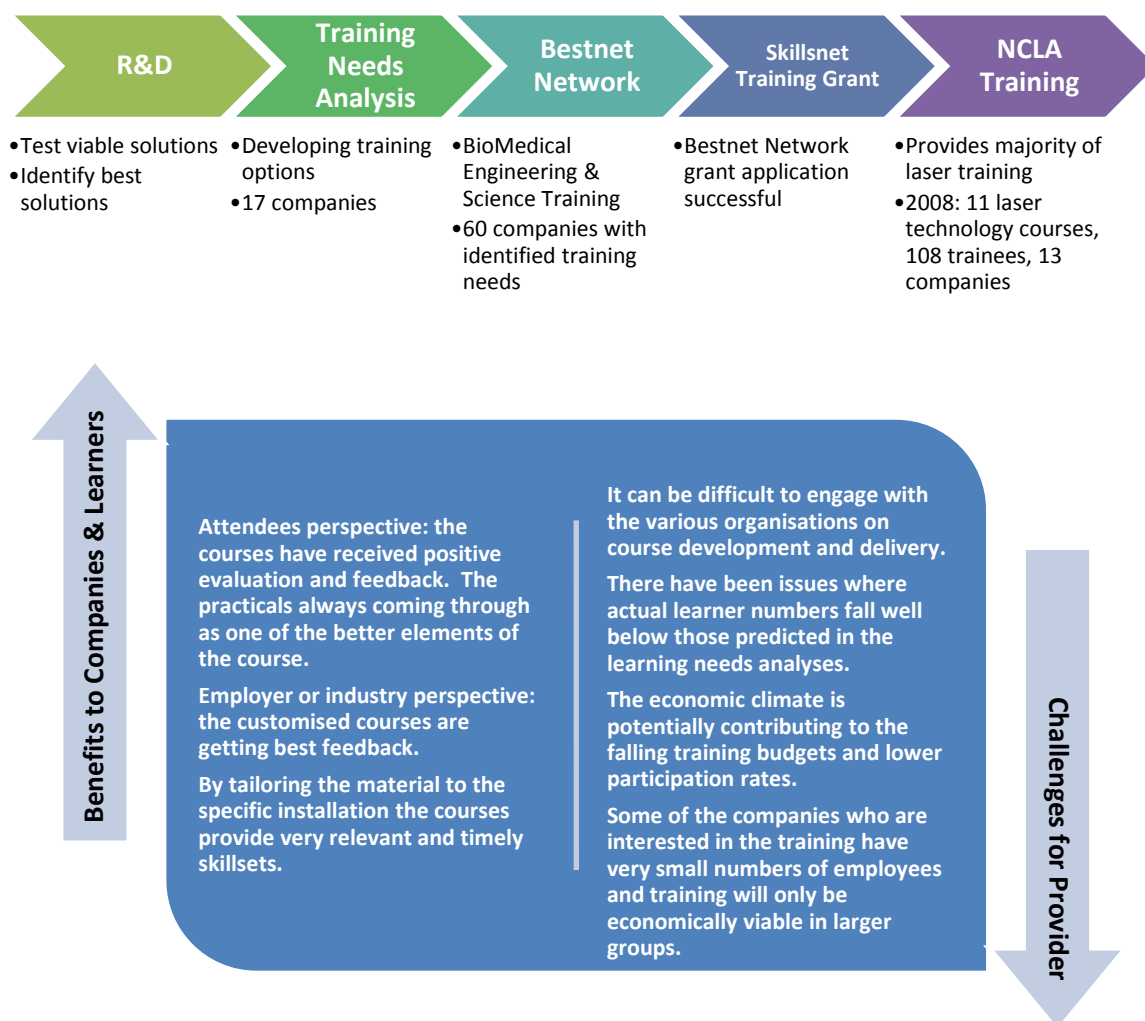


Figure 1: Benefits to Industry/Learners and Challenges for Course Providers

Accreditation and Validation

There is a growing interest from the employer and the learner in accreditation of the courses. NUI Galway looked at the national framework of qualifications and felt that a FETAC award would be appropriate for the laser technology courses that are run in NUI Galway. Proposals have been put in for a FETAC level 5 or 6 award in all of the courses and a FETAC quality assurance system has been developed.

While accreditation will be beneficial to all stakeholders the process is challenging in terms of the timelines involved.

Key Learning

- Industry favours courses that are customised and incorporate practice-based learning
- The actual number of learners won't always reflect those predicted from the learning needs analysis
- Viability of training small groups
- Challenge of timelines involved in accreditation process



A Work Place Project – Adding Value for the Employer:-

IT Sligo

Louise O’Gorman

Abstract

IT Sligo is committed to developing links with industry. This is especially important where project work is concerned. This presentation focuses on the relationship between the student, employer and the institute. IT Sligo’s school of engineering has the largest number of courses delivered online in the country. Programmes from levels six to nine on the national framework of qualifications are available. Projects worth between 5 and 30 ECTS credits are awarded. A majority of students studying online are in employment and where possible lecturers try to link the student’s project module to their work environment. This enhances the learning outcomes for the student while at the same time including the employer and adding value to a real-life problem. Here we examine a case study of a student who developed an energy management policy for a large multinational company as part of his project work on the Masters programme in Energy Management. The learning outcomes for this module are to:

- Identify, conceptualise, formulate and communicate a research proposal for a specific area of energy management.
- Complete a major programme of work requiring sustained intellectual and creative effort with the objective of developing critical abilities in analysis, synthesis and evaluation.
- Generate recommendations based upon review and analysis of the work accomplished.
- Present both in written form and verbally, different elements of the thesis, based on coherent arguments for the assessment of needs, influences, consequences and achievements.
- manage a personal learning process, and to demonstrate monitoring and revision procedures through the development of the thesis.
- integrate knowledge and skills from different areas of the programme in order to fulfill a well-defined objective.
- Identify, evaluate and apply appropriate research methods.
- Recognise the information and resource requirements related to a proposed investigation and employ them appropriately.

The results of the example project are currently being examined by the employer and potentially rolled out to the company’s plants worldwide. A further benefit of developing research projects in collaboration with employers is a deepening of the relationships with industry. IT Sligo can respond to the needs of employers in a more timely fashion.

IT Sligo and Industry

Relationship with Industry

IT Sligo has a mixture of traditional and new programmes and a lot of the success of these programmes is based on reacting to the needs and wants of industry. Links with industry are well established - the MSc in

Environmental Protection, dating to 1984, is still very popular. New courses, such as Web Design and Gaming Technology, Mechatronics (a combination of Mechanical Engineering, Electronics and Control Systems) have been developed based on industry feedback. Forensic Analysis is another popular new course. IT Sligo has developed special purpose awards for companies like Masonite – a Leitrim based Company. Another example is the bespoke Higher Certificate course that is provided to all employees in the Prison Service.

There has been a continuous growth in industry demand for IT Sligo’s on-line and distance learning provisions over the past 5 or 6 years, with nationwide participation. Some programmes, for example the level 9 in Bio Pharmaceutical Science, has 17 students in New York. Broadcasting lectures live and producing podcasts for download provides flexibility and convenience for learners with work commitments, along with the modular approach to course design. IT Sligo is committed to facilitating flexible learning and tailoring courses to meet specific and changing industry needs. Recognition of Prior Learning is embedded into IT Sligo’s procedures and processes.

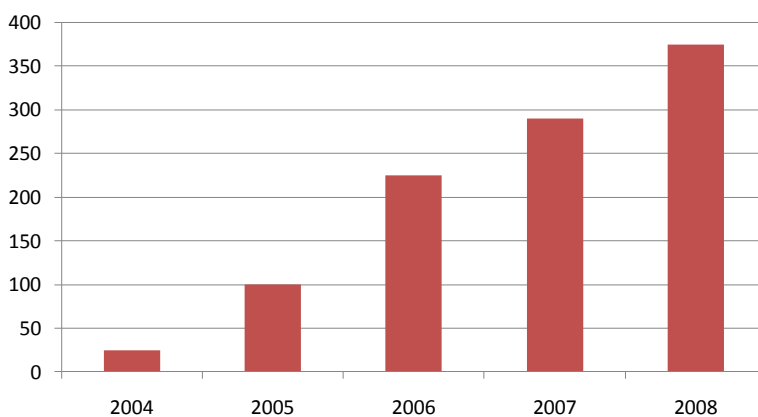


Figure 1 Growth in On-Line Distance Learning in ITS 2004 - 2008

Almost all of the on-line and distance-learning courses have between a 5 and a 30 credit project. The level 6 Good Manufacturing Practice course has a 30 credit module on a work based project and that is completed after the taught modules. Students go back to work and over a 6 month period they undertake a project based at level 6. At the other end of the spectrum there is a level 9 Energy Management Masters which, again, has a 30 credit dissertation element. Students are encouraged to work with their employers to identify a real live problem and then to work around that problem for their project.

Work Based Project

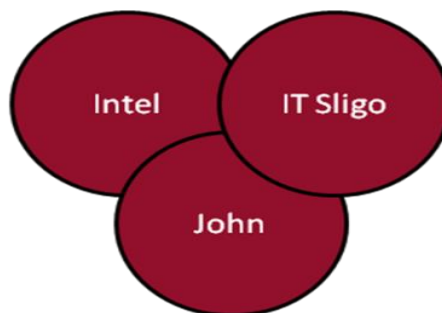



Figure 2 – Work Based Project Example

This case study is based on a learner, John, who is a maintenance engineer in Intel in Leixlip. John spoke to the level 9 Energy Management course coordinator at an open evening in IT Sligo. Following the discussion he



decided to do the Masters. He thought the taught modules were relevant and felt that he could base his dissertation around his employment. The following is an excerpt from his own description of his project:

Energy usage in the semi-conductor industry is always a high priority. The 'copy exactly' philosophy is embedded into this industry and it can impede innovation locally. Thus making changes to equipment, running or systems is almost impossible. This means that anything that is done in Leixlip is done in Portland, in Arizona and in Singapore exactly the same way. So it is very difficult for local people to improve and recommend changes.

A problem was highlighted when energy consumption surveys were carried out on particular tool sets. The tool set in my Department, toolset X, was maximising profits for Intel when it was processing, but reducing this profit margin when idling. The percentage difference of energy consumption between processing and idling was a mere 34%. This small percentage difference led me to believe that the idling consumption was far too high and had potential to be decreased.

For my project I met with some senior engineers, my manager and the engineering group leader and it was decided a full investigation would be carried out as to who were the main energy consumers and why there was only a 34% difference between the two modes. This brought about the initial title of my project – To energy map Toolset X and provide recommendations for energy conservation. This, however, was thought by my supervisor in IT Sligo to be a data gathering exercise with no goal. After some more discussions Intel and I agreed that the new title would be – To reduce Toolset X's idling consumption. The assigned supervisor for my thesis was familiar with the intellectual property policies that Intel had in place to safeguard their technology and competitive edge and was sympathetic towards the needs of my employer. My supervisor also provided me with very good direction, insight, and an array of methodologies to overcome problems and stumbling blocks. I have submitted my project and my intention is to progress with my resultant recommendations on a special in-house project.

He is hoping that his in-house project is something that could potentially be adopted on a global basis.

Feedback from John's manager:-

Intel, being a multi-national company with similar toolsets across the world will hopefully use the 'copy exactly' technique that John has developed to reduce Toolset X's idling consumption globally. This is provided there is no impact to production and real cost savings is demonstrated. That is the next stage he is going to have to do within the company on his special project. To identify that this will genuinely reduce costs. Career wise for John, having a Masters degree in such a topical area will only add to his profile in Intel and I am very happy with the support he received from IT Sligo during the project phase.

Work Based Project Benefits

What this case study shows is the symbiotic relationship between the 3 entities, student, employer and Institute. The project is based in the middle and it really should be a win-win for everybody, particularly if there is a genuine problem that the student can tackle. It may be a 5 credit project in Quality where a student may look at implementing a new quality system. If this can be done in conjunction with an academic to keep the student focused on the learning outcomes, it can be perceived as a very useful exercise.

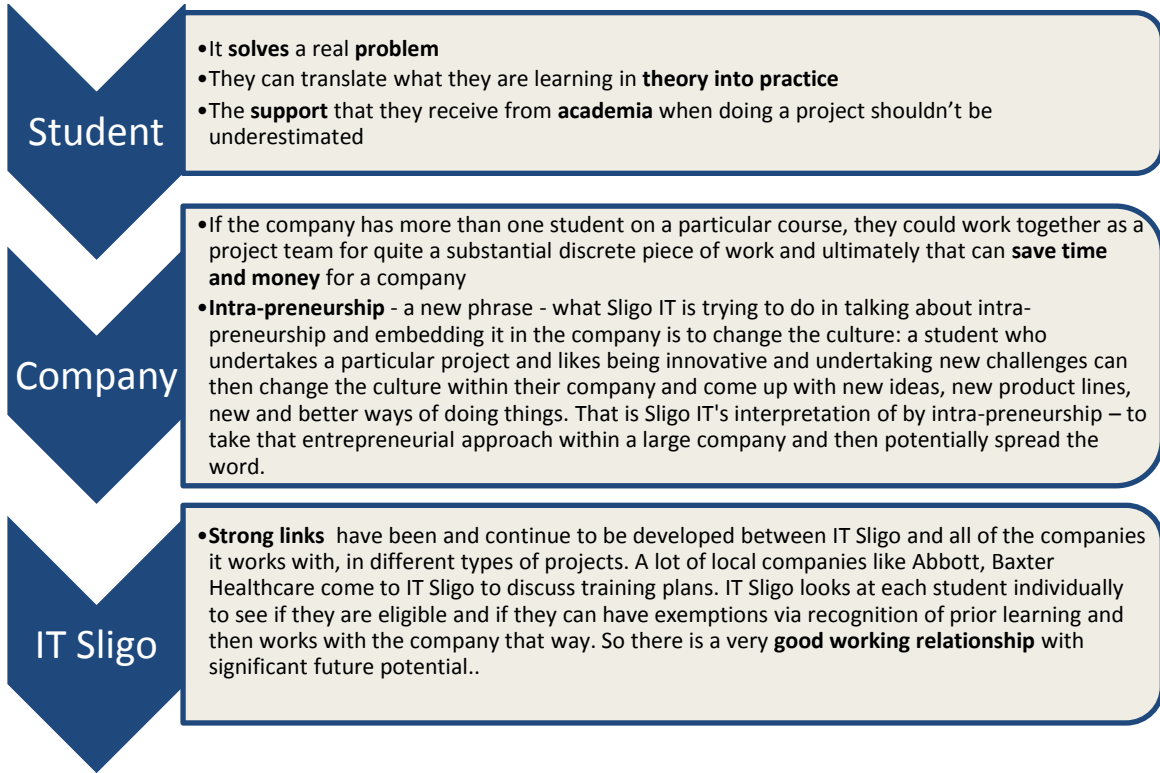


Figure 3: Work Based Project Benefits

Key Learning

- Flexible learning opportunities are an essential element of work-based provision
- Work-based research projects support innovation and intra-preneurship within a company
- Work-based research projects foster strong relationship with industry



Centre for Enterprise Development and Regional Economy (CEDRE):- WIT

Eugene Crehan and Edward Hendrick

Abstract

Purpose – This presentation looks at the practical implementation of an accredited course to assist individuals with innovative business ideas and enterprise development agents. The presentation examines both the South East Enterprise Platform Programme (SEEPP) programme and the Post-graduate Diploma for Enterprise/Innovation Centre Managers.

The SEEPP programme is aimed at those with innovative business ideas who are considering starting a business in the South East of Ireland. The programme has, in the past, supported 140 projects as diverse as new technology-based products/concepts, pioneering medical components/devices and original food products - the main criterion is that the concept is innovative.

Candidates have a third-level qualification (minimum Level 7) and ideally several years' experience in their chosen field. Participants work full-time on setting up their business during the one-year SEEPP programme. Participation on the South East Enterprise Platform Programme is free of charge to qualifying participants.

The Post-graduate Diploma for Enterprise/Innovation Centre Managers is designed as a pilot programme to support business development and growth.

Findings – Both the project manager and graduates of the programmes share similar views on motivations and barriers to entrepreneurship education. They raise the question of how many of the staff in the Educational Institutions are actually prepared to take on the level of responsibility that comes with dealing with an industry or with an individual, where the information they give out might actually have very significant implications of a financial or a legal matter.

Research limitations/implications – The paper was restricted to personal views of participants, but these may not be more widely generalised. The paper suggests directions for continued work on the relationship between factors in similar entrepreneurship programmes.

Background

Enterprise Ireland (EI) has invested quite heavily in capacity development around the country with the establishment of the Enterprise and Innovations Centres and most Institutes of Technology have an Innovation Centre.

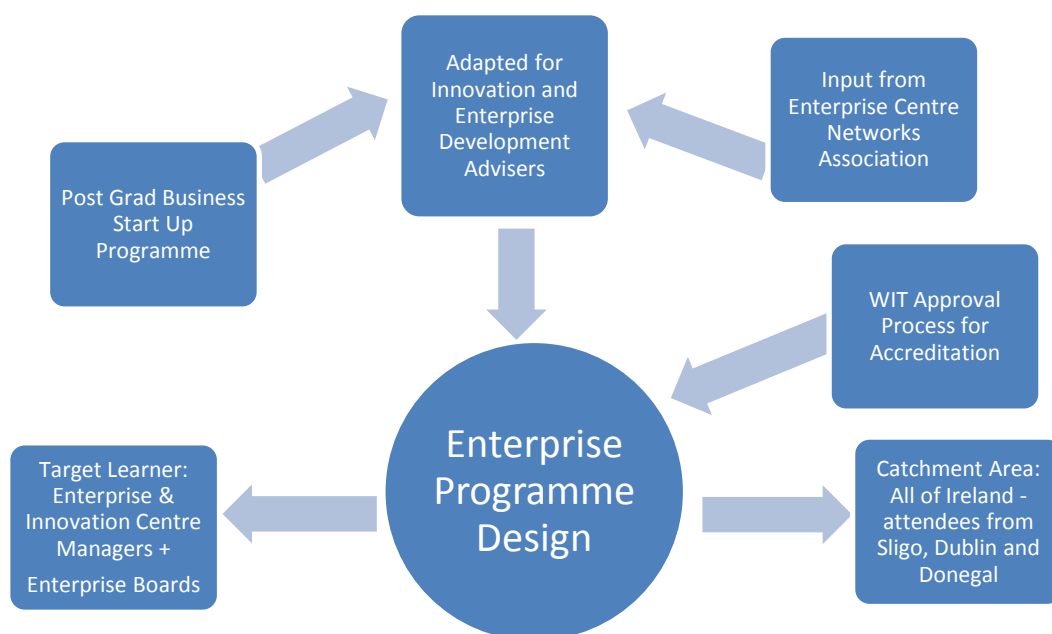
Some of the objectives of this programme were to empower the centre managers with new skills that would shift them away from being real-estate managers or landlords to being business development managers and being capable of giving enhanced support to their client companies in addition to acquiring additional business

development skills. EI is concerned with developing knowledge businesses and in supporting the clients of the Enterprise Centres in moving up the value chain by providing appropriate supports and access to information on issues such as Intellectual Property that may arise at the innovation end of the scale.

In Waterford the Enterprise Centre is based about 2km away from the main WIT campus in a new campus of about 140 acres beside the River Suir. The building is shared between the Telecommunications Software and Systems Group (TSSG) who employ 150 telecoms and software research people, and the Centre for Enterprise Development and Regional Economy (CEDRE). The Enterprise Centre is very much part of the School of Business and the programmes are delivered in cooperation with lecturers in the college and in the School of Business in particular. All of the lecturers involved in the enterprise programmes have worked in industry and they have that credibility when they present themselves to the client companies. The Centre is also involved in a number of EU projects exploring Female Entrepreneurship and Regional Competitiveness, among other topics. The SEEPP programme has been running for about 10 years - and recently it was further developed and put through an accreditation process in WIT. Those who participate in and complete the programme, whilst establishing their business, are now awarded a Postgraduate Diploma.

The Centre works to maintain its links with those who have come through the programme and Enterprise and Awards events give an opportunity to network and showcase the successes. It is estimated that over 300 jobs have been created with the 140 start-ups that completed the enterprise programmes in the last 10 years. The former participants are advocates for the Centre, they are valuable referrals.

A Post-Grad for business start-ups was in place when developing the Post-Graduate Diploma for the Enterprise Centre Managers. It was a case of adapting that programme to serve those who would be advising businesses. It was targeted at Enterprise and Innovation Centre Managers, with involvement from Enterprise Board employees also. People came from all over Ireland to attend the programme. Influencers within the Enterprise Centre networks association were approached in order to make the programme relevant and tailor or adapt the existing programme to their needs. They were involved from the early stages of the programme design. The programme is designed in such a way that there is an academic mentor involved in guiding the learner through the process. The programme was subject to the usual approval processes within WIT, in order to be accredited.



Enterprise Ireland supported the development and provided financial support. It meant that the cost to the client or the individual Enterprise Centre Manager was €1,500 – typically a Post-Graduate qualification can cost from €7,500 upwards.

The structure of the programme is an NQAI Level 9 and 12 months in duration. Participants have at least 180 hours of contact time over 30 days. They submit three documents during the year; they are a Market Analysis Report which is a full market scan / competitive scan / environment scanning exercise, a Business Plan and an Operations Plan. In addition to submitting the documentation they also have an opportunity to present their findings to a panel and they get feed-back and direction from the panel. The learning experience is largely self-directed and supported through learning logs.


The networking element of the programme was also important to the learners, as in addition to the network of Enterprise Centre Managers who meet regularly they gained access to the larger academic community within WIT.

Core modules included: 1) the Entrepreneurial Process: this dealt with some of the issues in moving from employment into self-employment, 2) Managing the Enterprise: this included anything from conducting market research to managing intellectual property, to building and motivating teams and 3) Growing the Business: this included the important issues of growth and internationalisation.

Much of the work was facilitated in groups and in addition to attending at WIT some of the workshops were moved out to other host centres from time to time. The syllabus also included some typical business subjects– from Market Analysis, Market Research, Market Planning, Managing Intellectual Property, Building Teams, Growth and Exporting, Selling and Presentation Skills.

The academic mentor advised the students through the process and met with them monthly, but was also available via e-mail. The Post Grad assessment strategy includes three written documents and one of them would be a full Business Plan, three presentations with feed-back, the monthly review plus the learning logs. They were also appraised by internal and external exam boards.





Ed Hendrick- who participated in one of the programmes provides his own perspective on the experience:

I'm Ed and I'm from a company called Sonru.com. Basically, I am going to talk about the company first, and then how I developed Sonru after participating on the Platform Programme

I shall begin by briefly outlining some of the background around Sonru. Sonru is an automated online video tool used in recruitment, education and training. It is most commonly used to screen large numbers of job applicants very quickly and easily via the internet. Sonru is software as a service application. It cuts costs, removes scheduling from the process and is a very simple solution – especially in this climate with the amount of applicants out there at the moment, it is proving very beneficial.

The application works by interviewers entering the questions that they want candidates to answer and determining the duration of each. Once the interview has commenced it cannot be restarted. Sonru mimics a live interview environment online by asking unknown questions that must be answered within a time limit. Each chosen question and its duration, indicated by a diminishing time bar, will appear one at a time on the screen. Candidates must work through the interview chronologically with the following question being displayed when the time has finished for the present question. The videos are saved to the interviewers account automatically which is then viewed by the interviewer and any other authorised viewers at the end of the closing date.

So it is quite simply, a very simple way of interviewing a lot of people very cheaply using on-line video and the web.

I basically arrived onto the SEEPP programme with an idea about bringing on-line video into the recruitment process by looking at the likes of You-Tube and Skype. These influenced my original concept of “My-live CV”. Through research, talking to colleagues and fellow candidates, and networking “My-live CV” evolved through four concepts and became Sonru. The first concept was binned in the 3rd week of the programme. My project was selected by our lecturer Bill O’Gorman to be studied using Edward de Bono’s “6 Hat Rule” As a group we saw the good points, the bad points, what to progress with and what not to progress with. Ultimately we eliminated the process of video CVs and recognised the 1st round interview process as the one to move forward with. So that days lecturing completely changed what I was doing. That was a major step very early on in the SEEPP programme and one that probably would have taken me a lot longer and a lot more money to do alone.


My educational background is as follows: I have a degree in Agricultural Science, specialising in Agri-Business and Rural Development, and graduated from UCD in 2004. I am not a very technical person, and didn’t have a background in HR.

I met Chris Horan, was a fellow participant on the SEEPP programme, who had over 12 years software development skills and we teamed up to build Sonru. He came onto the programme with his idea, but it became temporarily paused for the moment and he became our CTO. That link was crucial. I wouldn’t have been able to build this if I had not met Chris, and that was through the participation on the programme. The big thing about that is that we were able to do this in a confidential environment and we were all in the same boat, starting off and trying to get going.

I met Fergal O’Byrne through a Wexford mentoring programme. He recently resigned as the CEO of the Irish Internet Association to become our Chairman. The fact that Chris and I had both completed the SEEPP programme lent us a lot of credibility and acted as an accelerator of Fergal coming on board with us.

A bit about SEEPP, Why SEEPP for me?

I had the beginnings of an idea, left my job and didn’t really know what way I was going to proceed. I was fortunate enough to move into the Enniscorthy Enterprise & Technology Centre and the manager John O’



Connor advised me to talk to Eugene in SEEPP. It was tough going from the start. You had to pitch and present your idea and get up in front of people and convince them and they accepted me onto it. I wanted an excellent business plan. I wanted to learn about accessing funding. I wanted a place where I could think and research and SEEPP definitely gave me that time the environment where I could do so.

I was also able to connect with WIT and capitalise on innovation vouchers from Enterprise Ireland for TSSG. TSSG were very important in the development of Sonru as they worked on the video parts of the system at a critical time.

It is a lonely place starting out on your own – I don't know if too many of you here have tried it. It is very difficult to get anything started. It was great that I was in a group of people who were in the same place, trying to do something fairly innovative and new and just give it a go. We were all helping each other and working with each other.

The other thing – It is a confidential and secure environment. This was very important for me. You are paranoid at the start about your ideas. No matter how unique or not they are – I think it's great that it is very confidential and you can talk to people in this confidential environment about your project and move it forward.

As the youngest on SEEPP I benefited hugely from the varying skills and experiences of others on the programme. Experienced lecturers and professionals guiding us and giving us a good insight into what was ahead. I think at one stage in my business plan I had about 13 advisors and I listed them all. It was there for me and it was all part of the package, which was brilliant.

The business network that opened up for us from SEEPP was the contacts into Enterprise Ireland, the contacts into your local Enterprise Boards, TSSG and then past participants of SEEPP that you would see popping up at different awards etc. You are constantly networking with these people. Basically, the opportunity to properly research the product was vital for me. As I say, we went through 4 stages of concept. We did that very quickly and cost effectively by doing it all through paper research. We didn't spend a massive amount of money building something, failing with it and then changing it. We did it all on paper and that was purely through research and working with the people on the course and the advisors we met.

Also, doing the Market Analysis report was hugely beneficial. It focuses you to do it and then the Business Plans after that was an excellent exercise.

We launched Sonru the end of February 2009. I don't think I would have launched so quickly or at all if I hadn't gone to the Enniscorthy Enterprise Centre and through the process of being on SEEPP.

Sonru was different from my previous academic pathway, it was a real life project, my project that I quit my job for and invested everything in.

Anything I learned on a Monday on SEEPP, I really looked at it and tried to input this into my business and where it was going. The biggest thing I got from SEEPP – the advice and the actual implementing the advice into our Company and into the strategy going forward.

Key Learning

- Practical implication is a very good source of entrepreneurship education.
- Enterprise development should focus on creativity and confidence-building.
- Capability Building within the client company and enterprise development agents is a very serious matter for the HEI.
- Students had to think about what they were learning and how did they apply it – this is a real stimulus to actually go ahead and to apply learning in their business.



Appendix

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