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ConnectED: an Enhanced Online Interface for Engagement between Industry and Academia

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Abstract

The drive for third level education institutes to engage with industry, enterprise and the community recognises their interdependence and need for continuous knowledge exchange. The extent to which students are capable of embracing their post-qualification roles, may be determined by the currency of the curriculum and work-readiness, which is informed by the context of the 'real-worlds' however they are shaped. Similarly, the activities that challenge industry, enterprise and the community could find support in the broad the spectrum of knowledge, skills and expertise that resides in the domain of formal education.

A key obstacle to collaboration between higher education institutes and enterprise seems to be one of communication. Typically, the discourse and structure of third level education institutes presents a challenge to those wishing to engage. This may be intensified by the tendency to 'silo' disciplines in a way that may not reflect enterprise categorisations.

Recognising this, three Dublin Higher Education Institutes, Dublin Institute of Technology (DIT), Institute of Technology Tallaght (ITTD) and Institute of Technology Blanchardstown (ITB) developed an innovative cross- institute approach to bridging the communication gap between the academic world and the communities in which they are situated. Specifically, the project partners collaborated to develop a platform, entitled ConnectED, to enhance proactive dialogue between industry and academia, thereby creating a trusting and supportive environment in which mutually beneficial interactions could progress and lay solid foundations of mutual respect and trust.

An additional aspect of the collaboration is that the three Institutes involved are

currently in the process of preparing for merger and applying for Technological University status. Consequently, working together on the project facilitated a closer working relationship and contributed to organisational restructuring debates.

In summary, ConnectED aims to be a sustainable and capable approach to promoting, enabling and facilitating engagement with industry, enterprise and the community. It seeks to establish partnerships for the mutual benefit of all the stakeholders and to embed the expertise and resources of higher education clusters in their strategic thinking. Supported by a consolidated enhanced online portal, an open access repository for engagement knowledge, impact story-telling, and resource-brokering, ConnectED contributes to the development of a strong engagement commitment and is a catalyst for an improved strategic approach to managing engagement relationships. ConnectED was funded by Higher Education Authority: Roadmap for Employment-Academic Partnerships (REAP) initiative.

Keywords

Enterprise Engagement, Collaboration, Online Portal, Proactive Dialogue, Strategic Relationships

1. Introduction

That the modern workplace evolves from the unchanging application of previously acquired skills into a dynamic environment capable of responding to market demands has been accepted as being essential for the Ireland of the future. The Innovation Taskforce Group (Department of an Taoiseach, 2010) highlighted the need to strengthen linkages between education and industry and reflects the emergence of knowledge exchange as a core strategic objective for Higher Education Institutions (HEI) driven by increasing constraints on public funding, growing competition for students and innovation-focussed Government policies. Similarly, Ireland's National Strategy for Higher Education to 2030 (Department of Education & Skills, 2011) envisages a strong engagement with society and enterprise and identifies the development of a more routine, proactive, two-way engagement at operational level as a key priority.

Accordingly, across the third level education landscape in Ireland, proactive engagement with industry is increasingly forming an integral part of HEI declared strategy.

At the heart of this engagement-focus lies the need to enhance proactive dialogue between industry and HEIs, thereby creating a trusting and supportive environment within which mutually beneficial interaction can be progressed. However, engagement with industry, by its nature, is complex and multi-faceted (Hughes, 2006) often requiring strategic, operational, organisational and cultural shifts by the HEI (Abreu et al, 2008). These shifts serve to move the HEI along an evolutionary engagement path which stretches from a reactive and sporadic approach to one that is embedded, progressive and inclusive (Jeffrey, 2009). Central to this is careful consideration of the challenges related to creating meaningful dialogue between organisations from two culturally different environments.

This increased need for improved enterprise engagement and motivation to address the associated challenges acted as a catalyst for three Dublin based Higher Education Institutions to come together and create an improved approach to engaging with external organisations.

Historically, Dublin Institute of Technology, Institute of Technology Tallaght and Institute of Technology Blanchardstown, all enjoy strong reputations for engagement with industry. However, much of this engagement has tended to be take place at a Department/School level rather than at Institutional level and as a result, it could be argued that the value of these interactions is not being fully optimised resulting in the loss of opportunities that could enable deeper strategic Institute/industry relationships to emerge.

While this in itself was a motivating factor to reassess the engagement approach, there was an additional significance that the three Institutions had agreed to merge into a single entity in advance of applying for the designation of Technological University.

Against this background, the Institutions set out to:

- Reflect on the nature of engagement within the three Institutions and the associated challenges
- Develop a single consolidated online portal that would support improved dialogue and engagement across all three Institutions
- Develop a rapport between engagement personnel from the partners in advance of the merger

Supported by Roadmap for Employment Academic Partnerships, a collaborative development project, ConnectEd, was established which aimed to develop a platform to facilitate proactive dialogue between enterprise and HEIs, by creating an enhanced online interface which identified and packaged specific examples, ideas, options and opportunities, reinforced by appropriate case studies. The options spanned the entire spectrum of engagement opportunities from lower commitment/risk interactions to higher risk/commitment interactions.

At its core, ConnectED was designed to be ‘a proactive resource with the capacity to pin-point and package very specific ways in which academia and enterprise could generate added value through collaboration.

By enabling and facilitating industry access to HEIs, with the expectation of mutually satisfactory outcomes, solid foundations of mutual respect and trust could be established, presaging mature relationships and, eventually, the active collaboration of partners that listen to each other and respond to articulated needs.

Thus, the key focus of the ConnectEd project was to better reflect the needs of industry, enable and facilitate improved communication and to respond with agility to identified opportunities. The expected project outcomes were:

- Branded online portal, linked to and from each partner institution website
- Case studies/exemplars from each partner-institution reflecting the full gamut of engagement opportunities across a number of sectors

- Tailored marketing and communication plans to promote the collaboration and engagement portal, and its benefits
- Strategy and recommendations for an effective and sustainable approach to industry engagement
- Showcase of current industry engagements across a spectrum of disciplines and expertise to encourage enterprise dialogue
- Stimulus to initiate and invite conversations with industry on the challenges they face, whether discipline-specific or hybrid
- Capability for engagement activities to inform the development of a customer relationship management (CRM) system

2. Approach

While engagement has always been a central tenet of the three Institutions, variances in scale, capacity, regional location and resources, has resulted in differing emphasises and approaches. Notwithstanding these variances, early project meetings confirmed the common challenges that existed when HEIs seek to reach out to enterprise and initiate dialogue. These challenges often relate to differences in operating environments, operational languages and key objectives.

While empirically the Institutions had an understanding of these challenges, a mechanism was needed to appropriately reflect on the nature of HEI /enterprise engagement and provide an informed basis for developing a consolidated online engagement portal. To provide this analytical framework within which to examine HEI enterprise engagement, cultural historical activity theory was adopted.

3. Cultural Historical Activity Theory

Cultural Historical Activity Theory (CHAT) is widely used to describe the interdependent constituents of human activity. CHAT, first graphically illustrated in the

1980s (Engeström, 1987, 2001; Engeström & Cole, 1997; Engeström, Miettinin, & Punamäki, 1999; Leont'ev, 1978; Roth & Lee, 2007), posits that human activity comprises subject(s), gathered in a community, who form and are formed by rules, among whom labour is divided, and who are joined in common cause in pursuit of an object or outcome, even if they may be differently motivated (See figure 1).

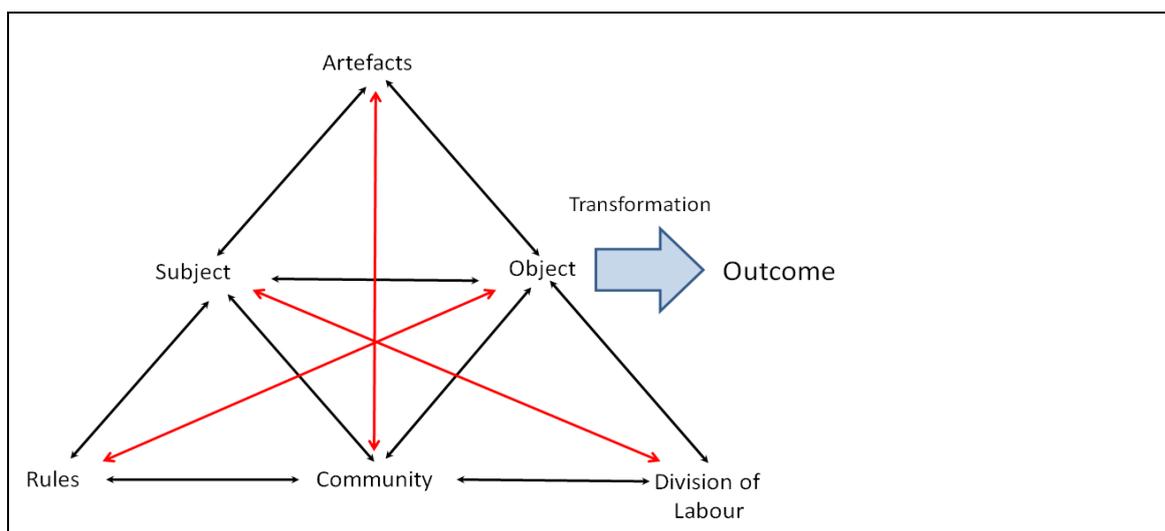


Figure 1. Co-dependent and inter-dependent affective factors or nodes of a social activity

Academia and enterprise are both individual communities in their own right, each with their own rules which may be formal and informal, and nuanced by temporary conditions. In the case of academia, the artefacts are embedded in curriculum, pedagogy and assessment. The subjects are the staff, whose motivation may be a combination of vocational, professional, and aspirational pursuit of different objects or goals. However, despite the highest standards, and the clarity of the individual's view of his/her object, the outcome of the activity may not be completely anticipated.

Similarly, enterprise activities are characterised by their unique motivation, discourse, rules, expectations and outcomes, however particular to their industry sector.

The encounter between two or more activities (e.g. academia and enterprise) may bring expectations and outcomes into conflict and may be problematic for on-going collaboration e.g. different language, motivation, expectation and perception of what constitutes an acceptable time scale. Consequently any engagement between these two

communities can result in a set of outcomes that may not be completely anticipated by either partner (See figure 2)

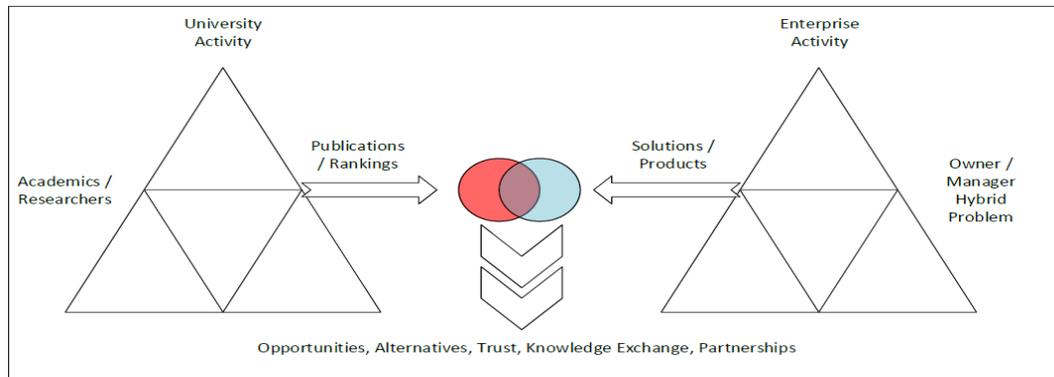


Figure 2. Two interacting Activity Systems (Engeström, 2001), modified by the authors

Academia in Ireland has developed a complex set of rules, artefacts, communities of practice, and divisions of labour over time, which may project an elitist and exclusive character, tending to exclude rather than embrace enterprise. The surrounding discourse is rooted in history and typically used to describe the internal structure of the education institute, and, as it is differently nuanced in different organisations, may not be mastered by the enterprise with ease. Furthermore, the structure of the HEI is designed, silo-like, around topic disciplines for efficient management and timetabling.

In contrast, enterprises develop matrix organisations that configure work groups to meet specific project needs through to completion, at which point they may be adjourned and become available to collaborate in new configurations. Similarly, different industry sectors evolve a vocabulary to facilitate communication which may be unavailable to academia. In other words, the discourse that surrounds the intending partners may operate to confound rather than clarify.

Academic activity, expertise and opportunity may be invisible to an enterprise if it is not communicated in a format that can be readily interpreted by enterprise. Academia when communicating their capabilities are often resource focused e.g. expertise and equipment listings, while for enterprise a more solution focused approach e.g., what the expertise and equipment can do, is more readily interpreted.

This disconnect between the two communities had to be considered in the development of ConnectED. Accordingly, ConnectED adopted the following key principles:

- Encourage informed dialogue with enterprise
- Communicate clearly the HEIs willingness to support and collaborate with industry, enterprise and the community, by recognising their discourse
- Describe the depth of opportunities and range of supports for businesses at every stage of maturity
- Provide practical insight into the experience of working with partners
- Present a ‘shallow’ and intuitive navigation structure capable of finding targeted information within two clicks

4. Developing the ConnectED Concept

Guided by the key design principles, a process map (See figure 3) was developed which provided a foundation for a prototype storyboard. This process map assisted in describing the portal’s positioning within the HEI context, its harnessing of existing resources and connection to future CRM systems.

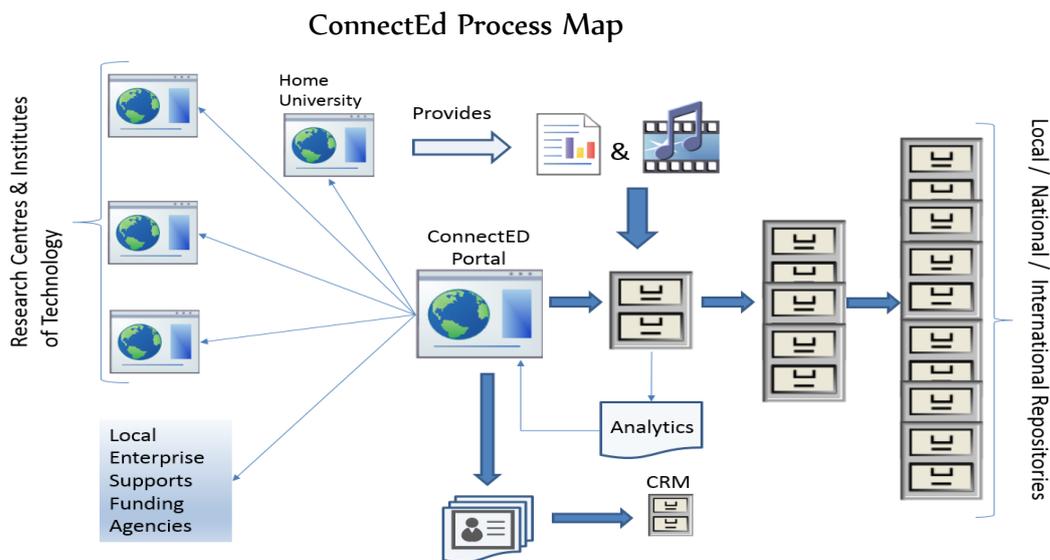


Figure 3. ConnectED Process Map

The map describes a process cycle that begins with the HEIs continuous provision of information including case studies, research and development, training provision, placements and other engagement activities. This information is edited and structured to appropriately reflect the language and context used by enterprise. It is then captured and documented in a local open repository which in turn, is aggregated into a larger national repository.

Each document stored in the local repository is uniquely identified by a URL and may be directly addressed by a hyperlink. In this way, case studies published by ConnectED can be retrieved by reference to topic, category and similarity to other documents, by any search engine. This not only helps companies' access engagement examples easily but also enables authors to track citations and downloads.

The portal incorporates three key components:

- Dialogue Facilitation
- Resource Information
- Case Studies

Dialogue Facilitation

While ease of use was a imperative design feature, the capacity to relay information in a structure and language readily understandable to businesses, and to be visually inviting and dynamic, were also critical guiding principles.

To ensure that the design of the ConnectEd portal reflected this, the developing prototype was demonstrated to representatives of a range of companies representing different industries and sectors. The feedback included observations regarding navigation, and the ability to search/browse research activity, available equipment, case studies, and to request a call back or ask a question. Based on this feedback, the portal was further tuned to achieve as close a fit with enterprise requirements as was possible.

Similarly, the portal was shared within the partner institutes to both promote its development and ensure a comprehensive capture of all engagement activities taking

place. This feedback provided the basis for the current look and feel of the gateway (See figure 4).

At the heart of the approach was a desire to create a mechanism that would both encourage and support improved and informed dialogue with businesses which in turn had the potential to be transformed into mutually beneficial interaction.

Resource Information

Apart from quick access to training, work placement and technology transfer information, the portal provides an enterprise focussed conduit to the range of research capabilities of the three Institutions. More than 200 different research activities have been categorised with each item associated with relevant keywords to enable direct and oblique searches. Not only does this facilitate speedy access to research resources by enterprise but also enables internal special interest groups to identify and collaborate with their peers.

Similarly, available research and development equipment has been catalogued.

Case Stories

The case studies seek to capture examples of successful engagement between the partner institutions and enterprise with a view to highlighting

- (a) the types of engagements that can occur
- (b) the process involved in engaging with one of the partner Institutes

They are designed to be simple to read, understandable and in particular with a strong emphasis on the actual engagement process itself. This helps ensure that they not only play a significant marketing role for HEIs, but also encourage staff members within the partner institutes to document their engagement experiences.

While within the three Institutions, dissemination represents a core element of academic endeavour, very often engagement activities fail to be captured, documented and

disseminated. This, in turn, leads to inefficient organisational learning and consequent failures to optimise opportunities.

To address this deficit, particular attention was paid to developing a simple yet effective template to encourage and facilitate the capture of engagement stories by staff which might otherwise remain hidden. Less than 200 words in length, the case studies are shaped by five elements viz., the issue, what happened next, how the contact was made, what the Institute did, and the benefits to enterprise.



Figure 4: ConnectEd Home page

5. Conclusion and Next Steps

In the course of developing the ConnectEd gateway, three key challenges had to be addressed reflecting not only the inherent complexities of HEI/enterprise interactions but also issues relating to internal communication and connectivity within the partner Institutions.

The first challenge faced by the project was to develop a communication channel between the partner institutes and enterprise that represented real value for both parties. This required presenting information from a problem solving perspective rather than from a resource marketing perspective. Often, this necessitated a re- categorisation of listed resources to better match the organisational structures and processes found in business rather than those found in HEIs.

The gateway itself also needed to generate an enthusiasm for interaction through its design, structure and content. The short, concise case studies were a key element of this approach as was the interactive nature of the gateway.

The second key challenge was collecting the data for the gateway. This issue arose due to a lack of existing connected databases within the partner institutions resulting in a gathering process that was slow and requiring continual cross checking and validation. Of course, having completed the process, a catalogue of resources across the three institutions now exists and can form the basis of any new consolidated database system that might emerge post-merger.

The final key challenge is one of integration across the three partner organisations.

The value of ConnectEd as a gateway to support enterprise in accessing Institution expertise and resources is recognised but its implementation will need to be fully aligned with existing and developing engagement support structures. During this process, it is important that it be reviewed on a regular basis and information updated appropriately.

The development process undertaken in creating ConnectEd has proved a valuable learning exercise for the three Institutes. At one level, it has led to a greater understanding of each others research, education and engagement capacity which in turn has helped identify possible synergies across the organisations. It has also identified potential collaboration opportunities across the different Departments and Schools and feeds into the merger preparation process.

At a very practical level, the project has brought three engagement teams from the three

project partners together working on developing a unified and consolidated interface to the external environment. This has contributed to creating a strong working rapport and trust between the participants and will greatly support the ultimate merger of the three teams.

It is important to note that the ConnectEd gateway was never envisaged as a single solution but rather a component of a holistic enterprise engagement support structure. The gateway primarily represents a single conduit that can support the creation of meaningful dialogue between the HEIs and enterprise by facilitating better informed conversations and seamlessly integrating these back into an organisation in a beneficial way. Its ultimate capacity to do this will be tested when it becomes fully integrated into the new merged entity in due course. In the interim, it serves as a launch ready solution for the merged entity with potential to be integrated in a stage process across the three partner institutions. It's dynamic nature, however, makes it imperative that it be continually reviewed, updated and monitored to ensure it's potential value can be realised optimally.

References

Abreu M, Grinevich, V, Hughes A , Kitson M , Ternouth P, (2008) *Universities, Business and Knowledge Exchange*, Council for Industry and Higher Education, and Centre for Business Research.

Department of an Taoiseach, I. (2010). Innovation Ireland : Report of the Innovation Taskforce: Ireland The Smart Economy *Innovation Ireland:* (pp. 132). Dublin, Ireland: Department of the Taoiseach.

Department of Education & Skills, I. (2011). *National Strategy for Higher Education to 2030*. Dublin, Ireland: The Department of Education and Skills.

Engeström, Y. (1987). *Learning by Expanding: an activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit.

Engeström, Y. (2001). Expansive Learning at Work: toward an activity theoretical reconceptualization. *Journal of Education and Work*, 14(1), 1-24. doi: 10.1080/13639080020028747

Engeström, Y., & Cole, M. (1997). Situated cognition in search of an agenda. In D. Kirshner & J. A. Whitson (Eds.), *Situated Cognition: Social, Semiotic and psychological perspectives* (pp. 301-310). New Jersey: Lawrence Erlbaum Associates.

Engeström, Y., Miettinen, R., & Punamäki (Eds.). (1999). *Perspectives on Activity Theory* (2003 ed.). Cambridge, United Kingdom: The Press Syndicate of the University of Cambridge.

Hughes A, (2006) *University – Industry Linkages and UK Science and Innovation Policy*, University of Cambridge Working Paper No 326.

Jeffery, N., (2009). Stakeholder Engagement – A Road Map to meaningful engagement, “How to Do Corporate Responsibility” Series of Doughty Centre, Cranfield University, UK

Leont'ev, A. N. (1978). *Activity, consciousness, and personality*: Prentice-Hall.

Roth, W.-M., & Lee, Y.-J. (2007). "Vygotsky's Neglected Legacy": Cultural-Historical Activity Theory. *Review of Educational Research* 2007, 77, 186-231. doi: 10.3102/0034654306298273