

EUROPEAN UNIVERSITY – BUSINESS COOPERATION

Thematic Forum

**NEW SKILLS FOR NEW JOBS - THE ROLE OF HIGHER
EDUCATION INSTITUTIONS AND BUSINESS CO-
OPERATION**

A Report on the Dublin Forum

22nd – 23rd October 2009

Final Report

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1. Introduction

'No one country, no one sector can solve today's challenges alone' - *Odile Quintin*, Director General, Directorate General Education and Culture, European Commission

The fourth European University/Business thematic forum (**below**) was held on 22-23 October 2009 in Dublin, Ireland. The forum addressed the theme of 'New Skills for New Jobs - the role of Higher Education Institutions and Business Co-operation' and was intended to both build on the work of previous thematic gatherings and assist European recovery from the current financial crisis. The Forum has as its origin a



European Commission initiative of May 2006 on delivering a modernising agenda for universities.¹ It was to advance this objective that the first University-Business forum was organised in Brussels in February 2008. This and subsequent fora have brought together a wide spectrum of experience and expertise from across the European Union: representatives of higher education institutions, companies, business associations and public authorities have been afforded the opportunity to exchange ideas and good practice on key challenges like curriculum development, enhanced mobility and understanding between industry and academia, the encouragement of lifelong learning and university governance.

¹ For the purposes of this activity, the term university refers to all forms of forms of higher education institutions including institutes of technology; colleges of education; specialist colleges, colleges of art and design; polytechnics; private business schools.

The fourth forum in Dublin in October 2009 was held against a very different economic backdrop to that of the first in Brussels, held just nineteen months previously. Across the two days of the Dublin conference, this was a point that would be repeatedly made. Speaker after speaker – from across the EU – referred to the fact that the world had changed profoundly. Speaker after speaker – from across the EU – referred to the fact that the world had changed profoundly. From the time of the collapse of Lehman Brothers in September 2008 through to the present, the outlook for graduates, universities and industry has been altered considerably. None of this, however, has done anything to weaken the argument for an increased dialogue between universities and business.

Speaking at the outset of the Dublin forum, **Odile Quintin, Director General, Directorate General Education and Culture, European Commission**, declared that university and business co-operation was not something that should be switched on in good times and off in hard times. If anything, it was even more necessary in the latter. Better links between universities and business would not alone bring both closer to what society needs, it would also render public investment in higher education and research more efficient. The argument for closer and better co-operation was further strengthened by the reality that Europe was no longer in a position to compete economically with other parts of the world on cost – it must invest in people.

The creation of a knowledge society remains the collective ambition. Opening the



forum, the **Irish Minister for Education and Science, Batt O'Keeffe TD**, (*Minister is seen on left with Odile Quintin*) stressed that a well-educated and well-trained workforce that embraced knowledge, innovation and lifelong learning would provide the very basis of Europe's future

competitiveness. For its part, the Irish government had already taken steps which it believed would help establish its economy as an innovation hub. '*Building Ireland's Smart Economy - A Framework for Sustainable Economic Renewal*' was published in

December 2008 as a blueprint for action in key strategic areas. Education and training, with its relevance to the needs of individuals and employers, lay at the heart of this vision. The Irish effort to strengthen higher education and business co-operation has focussed on curriculum development, research and development, as well as targeted initiatives that aim to develop skills to match labour market needs. In 2009, for instance, as a response to the sharp rise in unemployment which followed the economic downturn, the Irish government introduced 7,000 up-skilling and re-training places in further and higher education sectors to help workers who had lost their jobs to re-enter the labour force. The initiative was targeted at up-skilling workers for jobs in sectors considered critical to driving Irish economic growth: ICT, Engineering, Business and Energy.

Speaking to the forum, **Michael Kelly, Chairman of Ireland's Higher Education Authority (below)**, commented that such flexibility of provision will increasingly be



regarded as a key indicator of the responsiveness of Irish higher education to Irish society.

The challenges faced by Irish policy-makers are those that confront all EU member states. If

Europe is to create new enterprises and new jobs, **Odile Quintin** claimed that young people will need to be equipped with new skills to match labour market demands and those already in work will also be required to upgrade their skills. She added nonetheless that it was not only more skills that were required, but the right skills. The sheer pace of change made it difficult to identify what these were. Too often there was a mismatch between the knowledge and skills being conferred in education and training and the needs of people in a changing labour market. The upshot is that neither the economy nor the people who drive it are properly served. Quintin commented on the need to better anticipate the changes, so as to equip people with the right skills for the knowledge society. This was the fundamental purpose of the

European Commission's communication on 'new skills for new jobs', an initiative which lies at the core of the EU's Economic Recovery Plan. Essentially, this plan aims to identify what jobs will be available in Europe in ten years' time and to ensure that training and the supply of skills are a match for the changing labour market.²

But economic recovery was now not simply about 'repair': as far as **Michael Kelly** of the Higher Education Authority was concerned, it is and must be about 'reinvention'. While this would certainly necessitate a closer, more dynamic co-operation between higher education and business, Kelly warned against the possible presumption that such a dialogue would focus on science and engineering to the exclusion of the arts, humanities and social sciences. Quoting approvingly from a submission by a business and employers body to an Irish Foresight exercise, Kelly stated that the goals of satisfying the needs of enterprise and developing well-rounded, culturally literate citizens were not in opposition to each other; they were complementary. Bearing this and the pressing economic climate in mind, Kelly asked that attendees gather with 'open ears and open minds' and to think afresh about 'new skills for new jobs.'

² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0868:FIN:EN:DOC>

2. A New Era for University-Business Co-operation

‘...the world is such a dramatically different place now’ – Prof. Tom Collins, Vice-President for External Relations, National University of Ireland, Maynooth

The discussion around new skills for new jobs began with a frank acknowledgement of prevailing realities. On the opening day of the forum, two keynote addresses were delivered and both made reference to a world in crisis. The first of these was provided by **Professor Tom Collins (below), Vice-President for External Relations, National University of Ireland, Maynooth**, who offered a candid assessment of the current European condition. Professor Collins referred to a confluence of crises affecting banking, the economy and the wider society. These were impacting in different ways in different places throughout the Union, but most severely, perhaps, in Ireland. According to Professor Collins, universities could not be exonerated from blame for Europe’s current predicament. Not alone did the third level sector fail to predict the current crisis, but, to an extent, it contributed to it. This was most obvious in its analysis around free market liberal economics which was ‘more self reverential than it was critical.’ Such a failure of critical thought constituted a betrayal of the fundamental purpose of higher education which, for 400 years, had been to provide social critique and to ‘offer different ways of being’. What was now required of the third level sector was the intellectual energy to deal with the myriad challenges that confronted all societies, most notably the crises in banking, finance, culture and the environment.



To honour its responsibilities to society, higher education institutions needed to change profoundly. Beyond the core functions of creating, disseminating and applying new knowledge, these institutions were required to be both ‘custodians of culture’ and ‘market aware’. Being market aware was not the same as being industry-led and Professor Collins urged against too close a link with business. Instead of

concentrating on the immediate demands of business, higher education industries needed to look to five years down the road. By way of example, he suggested that higher education institutions in Ireland should now be acting as ‘a global intelligence unit, basically informing us of where the market is going. This is how we need to be positioning ourselves: where the new technologies are going to be grown; where the needs are going to arise. That I think is a role that we haven’t adequately done, and oddly enough, I think we can better serve industry as well, if we go down that road. For that reason, it needs a future and a long-term focus.’ Collins added that, in a genuinely knowledge-based society, it was important that higher education institutions became involved in national leadership and participate in a debate on the shape that success should take.

For Collins, a central lesson to be drawn from the experience of the last decade was that Europe must forge a new path. A society based on mass consumption was simply unsustainable. The only viable society was one based on mass creativity and that is



where efforts now needed to be focussed. This emphasis on change and creativity found an echo in the presentation of **Professor Finbarr Bradley (left)**, a former academic who now manages innovation programmes for several Irish and international organisations.

Professor Bradley spoke of how the world was breaking away from an industrial and manufacturing age of goods towards a learning age dominated by intangibles. It was, he believed, in such intangible assets as ideas, emotions, community and culture that value would be created in the new economy.

Adapting to fast-changing circumstances presents challenges not only to educators, but equally to industry. In his keynote address, **Addie van Rooij, Vice-President Human Resources TSG EMEA, Hewlett-Packard**, claimed that businesses which tended to succeed in these situations were those that understood economic crises and were able to adapt to them in a more customer-oriented way, creating products that

will be more required ‘for the economy and the society as a whole.’ The challenge of the current crisis then was to emerge from it better equipped for the future. Hewlett Packard bore testimony to the vagaries of the market and the potential transience of success: the company was itself a conglomeration of businesses that had essentially failed. ‘We had Compaq, we had Tandem, we had Digital, big firms that were, in their



time, known as IT industry leaders, but no longer exist, other than being part of HP’, **Van Rooij (left)** observed. In adapting to future demands, Van Rooij, like Finbarr Bradley, placed a stress on the importance of culture and community. For a multinational company such as Hewlett Packard,

however, this was a global culture and global community. Van Rooij spoke of an internet-based society capable of driving flexible services, flexible knowledge, flexible application for customers, learners and education institutes. He painted a picture of how technology was in the process of creating a new world where people interact and cooperate through an increasingly sophisticated network of communications.

The generation coming out of schools and higher education institutes will, he suggested, use this network to fit work around lifestyle. According to Van Rooij, a major challenge for business was to adapt their style to ensure that their employees worked most effectively. More flexibility and a greater use of IT was enabling HP to achieve this, but it was also helping transform the way in which the company approached the issue of research and development. Inevitably, this impacted on the company’s relationship with universities. Hewlett Packard had, for instance, reduced significantly the numbers of staff involved in research and development in-house. Instead, the company had increased its outreach with student groups and universities, using this network to deliver research on certain projects for them. ‘What we found’, Van Rooij said, ‘is that if we tap into a few graduates and university graduates or, you know, still students, what we found out is that they have a huge society, a community of web-based interactions that actually help us with the research without necessarily having to invest in it.’

3. Identifying New Skills: A Question of Definition

‘We need to adopt these old skills in new environments to create new jobs’ – Jens Bleiel, Chief Executive, Food for Health Ireland

The new era described in the introductory session of the forum has important repercussions on the competences and skills that Europe’s workforce will need today and tomorrow. **Batt O’Keeffe** TD, Ireland’s Minister for Education and Science, outlined a future where workers will have multiple careers and cope with ever more rapid technological change, creating a move from the idea of job security to that of employment security. The forum heard that employees now have between ten and fourteen jobs by the age of 38, and that the top ten in-demand jobs for 2010 did not exist in 2004. Identifying the new skills these workers will need, and when they will be needed, in advance is not easy. The only realistic way forward is through a close partnership between employers and educators, both of which are essential components of a ‘knowledge triangle’ based around the interaction of education, research and innovation.

Perhaps predictably, the first hurdle the forum surmounted was one of definition. For many, the use of the word ‘skills’ was limiting and it became clear that many of the desirable qualities both educators and employers were describing might be more properly described as attributes or competences. A second area of confusion was also addressed. As **Brendan Burns**, an employer and member of the **European Economic and Social Committee** asked: ‘Are these really new skills and new jobs?’ Many of the competences valued by employers are really enduring qualities, and the need is to find new and better ways for educators to develop them in students, so that they can then be applied in modern workplaces. **Professor Gillian Nicholls, Pro-Vice Chancellor, Salford University** later suggested that part of the problem is just the lack of a common language when we’re talking about skills and competences. Once we’re communicating properly, we can find a way to develop the kinds of general attributes we want graduates to have and this can be balanced with actual skills through curriculum development.

3.1 Forecasting Future Skills Needs

There was general agreement at the forum that the necessary task of forecasting what skills and competences will be needed, especially in the long-term, can be very difficult. As **José-Ginés Mora, Visiting Professor at the Institute of Education, University of London** made clear, forecasts about manpower and skills have, historically, not always been very accurate. The need to produce more of what **Michael Kelly**, Chairman of the Irish Higher Education Authority, described as ‘just in time solutions to newly emerging needs’ was clear, but the difficulty in achieving this was accepted. It’s certainly very difficult for employers and universities to make good decisions about what skills they should be focusing on without good information on what is happening in the real world of employment. Quality, reliable information about what happens to graduates is one output of the AlmaLaurea Consortium - a project made up of 54 Italian Universities, introduced to the forum by **Giancarlo Gasperoni, Professor of Sociology at the Faculty of Letters and Philosophy at the University of Bologna**. Graduates are interviewed three and five years after graduation to see what their employment status is and how useful their college education has been to their career development. Amongst many other things, the project is also able to reflect trends in current demand for different skills based on what student resumés are being requested by potential employers. The project thus provides on a large scale exactly the kind of information that allows universities to make informed decisions about programme content and skills trends.

There were also many examples of industry-driven attempts to predict future skills needs. **Una Halligan, Chair of Ireland’s Expert Group on Future Skills Needs**, suggested that although industry can’t always predict what specific skills it will need, their experience is that by coming together as a group, the accuracy of such predictions can be improved. The Expert Group has succeeded in shaping policy and driving specific skill developments because it is a genuine cooperation between the educational institutes and business people with real business needs. On this point, however, **Professor Tom Collins** added a note of caution: not alone did universities need to adopt a longer term focus, but where short-term responses to urgent skills needs were demanded, universities needed to ensure they didn’t take on long-term commitments in terms of staffing and structures. **Addie van Rooij** of Hewlett Packard summed up much of the thinking of the gathering: ‘The crucial element here’, he said,

‘is the co-operation and dialogue with real businesses – a dialogue about what will be needed in the future. Because trust me – we don’t know, we need help. We need to understand where this is going.’

3.2 Learning to learn

Professor Tom Collins suggested in his keynote speech to the opening session that the six key skills that the Irish National Council for Curriculum and Assessment (NCCA) think should be developed in students before the age of 18 might also be close to the competences that graduates of higher education need. Of these, perhaps the most important competency that Europe’s workers will need in order to adapt to the demands of the future is the ability to be lifelong learners. Collins argued that ‘higher education must work with students so that when they leave it they have a capacity to go on learning – that’s a given. No one is challenging that anymore.’ This was supported by **Dr. Anne Flierman, Spokesperson of the European Consortium of Innovative Universities**, who identified learning to learn as one of the key requirements for graduates, irrespective of discipline. Universities needed to respond to this challenge on two levels. As well as looking at curriculum development to ensure students developed the ability to keep learning when attending university, universities must also become more involved with delivering and accrediting the training and development that workers later undertake as part of their professional lives.

3.3 Innovation and Entrepreneurship

Towards the end of the forum proceedings, **Jordi Curell, Director, DG Education and Culture, European Commission**, observed that ‘the word that has come up most often I think is innovation... We need innovation. We cannot, anymore, compete on the basis of costs so if we want to preserve our European model, we have to be innovative. And of course innovation-led skills are the skills of the future, the new skills that will be required by the new jobs that we have to create in order to maintain the sustainability of our model.’ That innovation was a necessary attribute in tomorrow’s workforce was generally accepted, especially by business representatives, but there was plenty of debate about whether it could be developed by education. For example, **Tom Boland, Chief Executive of the Higher Education Authority in Ireland**, wondered whether enough was known about the characteristics of

entrepreneurs to enable higher education to create an environment that might better foster them. ‘My sense is it’s about creating a rich environment in which students develop the kind of qualities that make them entrepreneurs’, he added. ‘But do we know enough about those qualities or is entrepreneurship pure serendipity, pure happenstance, chance, whatever?’

This was a question that some speakers decided to meet head on. Having heard the list of competences suggested by the NCCA - learning to learn, information processing, personal effectiveness, communications, critical thinking and working with others - there was a certain symmetry when **Martin Duffy, Chief Technology Officer at SAS Institute’ Ireland**, told a later seminar that SAS seeks skills from their employees like risk-taking, communication skills, the ability to prioritise, the ability to tell the difference between what was important and what was simply detail, and the ability to solve problems. The competences were almost identical with the notable exception of risk taking, which many on the business side felt just isn’t being developed in graduates.

José-Ginés Mora, Visiting Professor at the Institute of Education, University of London, advanced the idea that being innovative was a mixture of nature and nurture. Innovation may be a personal attribute which is difficult to create, he argued, but a University must have a role in stimulating the innovative capacity of students. If they don’t, then the university can very easily kill the innovative spark.

Yet the notion of creating an innovation environment lies at the heart of what is being attempted at the **HAAGA HELIA University of Applied Science in Helsinki**. **Dr. Lauri Tuomi** noted that in many ways this challenged the existing structures of universities and involves developing new ways of teaching in the university. There were numerous insights into what specifically were the characteristics that needed to be developed in students in order to promote innovation and entrepreneurship.

Professor José-Ginés Mora’s research suggested that in reality there were only two specific competences that defined innovators – the ability to come up with new ideas and the ability to mobilize the capacities of others. This emphasis on developing the students capacity for ‘idea generation’ was also the main focus of the **COEUR**

programme outlined by **Professor Matthias Eickhoff of Mainz University of Applied Sciences**. Professor Eickhoff argued that there is lots of assistance for entrepreneurs who need assistance in the implementation of the idea, but the great challenge was in developing such ideas in the first place. This capacity to develop ideas was, he argued, the most important resource available to Europeans. The special qualities of innovators and entrepreneurs were so distinctive that **Professor Paul McCutcheon** of the University of Limerick made the point that society wouldn't work if all they produced were entrepreneurs - universities must also produce many other useful types of people as well.

3.4 Collaboration and Multi-disciplinary skills

A striking feature of the two opening keynote addresses to the forum was the reference both speakers made to the idea of mass collaboration. **Professor Tom Collins** suggested that the new age would involve a move from mass consumption to mass creativity, while **Addie van Rooij** painted a picture of 'the cloud' the complex network of communications technology that means mass collaboration is the work methodology of the future. The concluding session picked up on the idea with **Dr. Martin Curley, Director, Intel Labs Europe**, pointing to a recent report from the European Internet Foundation suggesting that by 2020 the dominant paradigm that they see above all others is mass collaboration, which is a real challenge for higher education institutes.

Jens Bleiel, Chief Executive, Food for Health Ireland (FHI), suggested that there were specific skills that needed to be developed for working cooperatively. FHI combines the highly-developed scientific research skills of academics with the excellent marketing and production skills of the Irish food industry but for the combination to work, everyone has to work on their soft skills of understanding and trusting other disciplines and communication. 'We need to adopt these old skills in new environments to create new jobs' he suggested.

Dr. David Lloyd, Dean of Research at Trinity College, Dublin echoed those sentiments in his comments to the closing session on what educators are hearing from employers on the kind of graduates needed to work in this way: 'By listening to what business says, you start to think about how you can change things. And what they

asked for is a T-shaped individual in terms of their experience. They want somebody who understands their discipline and can engage with other human beings. And understands when somebody from a different discipline is speaking to them about something that's important to them that they can be brought into their way of thinking.' **Dr. Anne Flierman** argued that: 'What you see nowadays is that questions from society and from business are more and more complicated. They cannot be answered by people knowing just one discipline - they have to know more disciplines, they have to be able to deal with different paradigms and with people from different disciplines. They have to be able to work together over the boundaries of those disciplines. Multi-disciplinarity is one of the key skills we will require from our graduates in the future.'

Perhaps the most challenging idea of the qualities that modern graduates will need came from **Professor Finbarr Bradley**, who argued that in the innovation age the most valuable knowledge will be tacit, and that universities and business must create environments that promote imagination, inspiration, intuition, ingenuity, initiative, a sense-of-self, self-assurance, self-confidence and self-knowledge.

4. Business & Education: Two Worlds?

‘This is a two-way street, where the benefits are high for education and enterprises alike, and for the students who straddle both worlds’ - Odile Quintin, Director General, Directorate General Education and Culture, European Commission

A recurring theme throughout the conference was the challenge caused by the cultural divide between the worlds of education and business, with many attendees suggesting that the relationship between the two can be limited by the lack of a common language or by incompatible expectations on both sides. **Brendan Burns** of the European Economic and Social Committee told the conference it was difficult to get businesses, especially smaller businesses, to really engage in co-operation with academia. At the same time, modern academics are being pulled in many directions – teaching, researching and engaging with employers. But while no one underestimated the size of the challenge, there was also a real feeling that by coming together in fora such as the conference it was possible to develop new ways of bridging the gap. In the current economic climate, when Europe’s need for a highly-skilled, adaptable workforce has never been more obvious, the work of the conference seemed particularly urgent. As **Odile Quintin**, the European Commission’s Director General for Education and Culture, told the opening session: ‘It is my hope that this forum can provide us with new models for recharging the relationship between business and universities. This is a two-way street, where the benefits are high for education and enterprises alike, and for the students who straddle both worlds. This debate can be a milestone towards this new skills for new jobs strategy.’

4.1 A balance of responsibility for producing competences and skills

One prominent area of discussion was what skills and competences educational institutes should have instilled in students before they enter the workforce and what employers should develop through on-the-job training. That the idea was a crucial one was not in question. **Professor José-Ginés Mora**, Visiting Professor at the Institute of Education, University of London, claimed that the ‘most important knowledge transfer from universities to business is through graduates – the capacity of graduates for producing innovation in the firms they join.’ This was strongly reinforced by **Dr. David Lloyd** of Trinity College who told the conference’s closing session that ‘In the

transfer of knowledge, the most important piece is the graduate. If we can instil innovation in our students and if they can go on to be better employees, better creative thinkers, catalysts for change within the organisations that they find themselves in, or they create themselves, then we have a mechanism for transferring the best of universities into the best of society.'

There was a general, but nuanced, agreement that higher education should aim to develop in graduates the broad attributes or competences that would allow them to be good employees, while employers should take responsibility for the practical skills necessary for the specific job. **Imogen Bertin, National Association for Integration of Research, Teaching and Learning (NAIRTL)**, in Ireland, informed the conference about their recently published research that indicated that employers, students and academics in Ireland, for example, were largely in agreement that the responsibility breakdown should be for higher education to develop the general competences, such as learning to learn, which then made it easier for employers to take more responsibility for specific skills training. **Addie van Rooij**, of Hewlett Packard, also addressed this issue in his keynote address to the opening session. 'It's not that we expect an education institution to deliver a 'packaged solution' - a graduate that's ready to perform. The task of adapting graduates into a commercial company like HP is our role, because that kind of adaptation is different in every company and in every institution.'

However, it was also clear that the balance of responsibility in developing specific skills and competences in graduates could vary depending on the partners involved. **Dr. Christoph Anz, Corporate Human Resources, BMW** introduced a different take on where that balance could lie. 'Universities' he told the seminar on identifying skills, 'do have a responsibility to educate their students in such a way that they have a real chance to get a job in the labour market'. BMW want new staff to be able to contribute immediately, and while this certainly requires them to have certain broad competences, they also need some specific technical skills.'

Martin Duffy, Chief Technology Officer at the SAS Institute, Ireland suggested that the balance between providing students with a broad, general education and providing them with skills and competences for working in a real-world business was too

heavily weighted towards the former. SAS wanted new employees to have competences like problem-solving, communication skills, risk-taking, and the ability to prioritise. These were the skills and qualities that a business needed for wealth creation, but they were not the skills that the education system currently produces. Because of that graduates can be less an asset than a burden when they emerged from universities. 'We take graduates in,' he informed the conference, 'but it takes a year before we make money back on them.'

So, where the balance lies is a matter for debate, but the key message from all of the contributors was that it was a debate that must take place on an ongoing basis and one that required good communication between the educational and employer partners. For example, Hewlett Packard's 'open laboratories' make research projects available to university groups who can work on them collaboratively. By working directly with universities and students in this way, HP is helping their educational partners to produce graduates ready for the kind of collaborative, innovation-led working practices that they will use in the future workforce. This forward thinking was mirrored by the Innovators Workshop programme at HAAGA-HELIA University of Applied Sciences, Helsinki, described by **Dr. Lauri Tuomi**, which gets IT students from first year onwards to interact with technology companies on real problems in a virtual environment. As **Dr. Christoph Anz** of BMW told the conference, 'We need a continuous contact with higher education institutions to tell them what we need, what are the most important fields of research and development from our point of view, and at the same time to hear about what kind of study programmes they would like to offer in the future.' The balance of responsibility is also increasingly affected by the need for education institutes to get involved with lifelong learning and up-skilling existing staff. BMW values academic partners who can be flexible in offering further education to their existing staff, whether they have academic qualifications or not.

The BMW experience has been that for the relationship between universities and business to be productive, business needs to work harder to identify and communicate what their real needs are in terms of skills and competences. Communicating these needs clearly allows their higher education partners to make good decisions on how to ensure their programmes actually develop the skills and competences that BMW and other employers need. Both partners have to see the partnership as a long-term

engagement. Like BMW, for SAS the solution lies in working with universities to introduce some of the practical analytical skills needed in the real world to graduates. For example, the **Advanced Analytics Institute** is a collaboration with three universities that gets graduates to work on real-life problems from the public sector in order to develop analytics skills. The key to the matter is knowing when learning of real skills should take precedence over the more general type of education. Getting this balance right means closer connections between education and business. **Pádraig Ó Murchú, Intel Ireland**, suggested that the only way for universities to be market aware is to be closely involved with business, and this was expanded on by **Jens Bleiel** of Food Health Ireland who told the conference: ‘There can be a challenge in that not all of the companies know what they want from the market and from academia, so that is the process we have to steer. But the universities should be responsive to the market, but with what the market wants in a long-term focus as well.’

4.2 University Independence.

Perhaps inevitably, the focus on its relationship with business gave rise to a discussion on both the function of universities and their academic independence. Both keynote speakers, **Professor Tom Collins** and **Addie Van Rooij** of Hewlett Packard, voiced a view that Universities had to maintain their own independent role. Meanwhile, **Gilda Rota, University of Padua**, articulated the practical concern that universities could not constantly alter their programmes to reflect the market or the short-term needs of employers. ‘We have to give to our graduates the ability to learn, to be flexible and understand all the changes in the market. Companies on the other hand have to give to graduates the skills they need. We have to work together – we give the basics and the companies do the rest.’ Similarly, **Professor José-Ginés Mora** explained to one seminar gathering that the job of the university has always been to serve society, but if we only look to fill the short-term needs of the skills needed by industry now we are not serving society because we must also look to the future and try to tell what the society of the future will need. **Brendan Burns** suggested that part of the dialogue must be that university funding was going to come down to their cooperation with business and if universities weren’t able to cooperate they would need to be able to show how else they were benefiting society.

4.3 Research versus Innovation

Another area of debate was the divide between the responsibilities of academia and business for conducting research. **Professor Tom Collins** opened the debate by suggesting that ‘Higher education must always focus on the creation of new knowledge, but that doesn’t have to be ‘blue sky research’. It can often be new knowledge in how do we apply the knowledge that’s there.’ Research, he suggested, is basically turning money into knowledge, which is a necessary process, but there also needs to be innovation when existing knowledge is turned into money. This was strongly echoed by **Addie Van Rooij**, of Hewlett Packard, who argued that innovation applied to the customer’s needs was what business should aim for and ‘doing research for the sake of doing research is no longer a function of the company.’

Michael Turley, CEO, **Digital Enterprise Research Institute (DERI)**, argued strongly that while there is pressure to make research at third level more relevant to the demands of industry, universities must also be given freedom to conduct research as they see fit if truly new ideas are to be developed. The best and most profitable place for universities and industry to work together was in the area of applied research. There was a significant difference between pure research and applied research, so much so that at DERI they have created a separate unit specifically devoted to concentrating on how research could be applied practically to producing new products or innovating ideas. The idea of making research in universities more relevant to industry again raised issues of academic freedom, but as **Martin Curley** of Intel suggested: ‘In Ireland, we have a cohort of leading information technology companies and we couldn’t find a single academic in any of the computer science departments in Ireland working on the real needs of the industry. So I think that’s academic freedom gone wrong. What we need is academic freedom with accountability.’

4.4 Building Relationships and Common Language

The forum returned repeatedly to ways of improving the relationship between business and education. Two themes were particularly prominent – the need to use a common language and the need to make it easier for employers to make contact with universities. As **Dr. Christoph Anz** of BMW suggested ‘We must be aware that we are living in different worlds and we have different targets. Often we speak different languages and that means we must take the time to develop mutual understanding.

This isn't possible without transparency on both sides.' **Brian Clements, University of Wolverhampton**, made the point that this kind of communication was a skill that wasn't highly developed in our universities, where research is the main focus. Universities need to value these kinds of skills more highly. **Dr. Liz Wilson, Dragon Innovation Partnership, (centre right)** suggested that making an effort to simplify communication

was a key to their success in Wales: 'The most important thing for us is that we use a language that makes it easy



for employers to work with us.'

The need for an easy first point of contact for employers who want a relationship with a university was highlighted on more than one occasion. **Gilda Rota**, University of Padua, told the conference that they had interviewed almost 3,000 companies and almost all of them asked for a referee within the university because they simply didn't know who to speak with. This idea of a single point of contact was also strongly advanced by **John Murphy, Cork Institute of Technology**, who presented the findings of the **Roadmap for Employment-Academic Partnerships (REAP)** project in Ireland. **Lars Vildbrad, Deputy Director for Regional Development, Central Denmark region** similarly stressed that creating a single point of contact for employers wishing to develop a relationship with a secondary education institute had been a successful innovation under the new Danish regional development model. Creating a single point of contact within a university for any business interested in a partnership was a simple, practical step which made it much easier for businesses, especially small businesses, to get the partnership they needed.

5. Searching for the Right Skills: Models of Co-operation

‘There is a suggestion that Higher Education Institutes have to change because they have to satisfy employers. But there are two sides to that coin.’ - John Murphy, Cork Institute of Technology

The forum heard plenty of evidence on the difficulty of developing the kind of co-operation between business and universities that leads to identifying and promoting the new skills Europe needs. But the forum was also informed of practical examples of productive cooperation. What was perhaps most striking about these projects was their variety – some driven by employers, some by universities and some by the state or the EU. Some projects combined several universities and employers in complex pan-European networks while others were equally effective as a partnership between a single big employer and their local educational institute.

In many ways, **John Murphy** of the **REAP project** set the scene for looking at the different types of partnership in his contribution to the seminar on Regional Development. The REAP project combined a survey of the international literature with an examination of case studies of the different types of relationship which nine Irish higher education institutes had experienced with employers. He centred his presentation on the useful idea that the relationship between employers and academic institutions is a continuum with mutual awareness at one end and a close strategic alliance at the other. Their research identified eighteen different types of interaction between educational institutes and employers, and in the course of the two days, the conference heard evidence from relationships at many points on the continuum. The seminar on identifying new skills heard from three different perspectives:

5.1 BMW

Dr. Christoph Anz, Head of Corporate Human Resources Strategy for the BMW group in Munich, told of how the company’s relationship with the higher education sector had changed to take account of the new skill-sets required by the company. BMW regularly reviewed the kind of competences it needed both in the present and into the future. This type of internal information-gathering has been used to revamp both the company’s strategic planning of human resources and its academic programmes. ‘It has led to new opportunities to co-operate with Higher Education Institutions and to educate students in a better way than before’, Dr. Anz explained.

With almost 100,000 employees worldwide, BMW is a company that affords entry opportunities at both vocational and academic level, reflecting the diversity of skills and competences required across its operations. But whereas much of the co-operation between BMW and universities in Germany and beyond had tended to focus on research and development, the company has in recent times come to the realisation that it also needed to co-operate in the fields of education and learning if it was to get the best-educated graduates. This provided the impetus behind changes in the company's academic programmes. Until recently the students selected by BMW for its programmes could choose for themselves the higher education institute they would like to study at. That element of choice has been abandoned and the company now has three universities of applied sciences which it uses as partners for the bachelor programme it offers.

Significantly, these universities were chosen following a screening process where BMW sought out study programmes best suited to developing the skills and competences they required. Examples of such programmes included Car IT and technical engineering with a special impact on high voltage. The screening process enabled BMW to identify a dozen higher education institutes with interesting, high quality programmes and contact with these institutes was then initiated through their directors or presidents or, occasionally, the deans of relevant departments. The approach took the form of BMW explaining to the institution how they would like to use one of their study programmes, change it and bring in students selected by the company. In effect, the study programme was customised to meet BMW's requirements. Dr. Anz acknowledged that this industry-led approach posed challenges for both the higher education institution and the company. For the higher education institution, there was a genuine interest in co-operating with BMW and some even felt honoured to have been chosen by such a prestigious company. On the other hand, BMW made demands on how their study programme was structured and implemented.

Critical to the success of this model of co-operation was transparency. During negotiations with their university partners, BMW was able to explain to the relevant Professors why it was the company needed certain skills and competences and, by

extension, why these needed to be catered for in study programmes. An enhanced understanding on both sides made it possible for the changing of the content of study programmes to be a joint undertaking. BMW found that the universities of Applied Sciences in Germany were much more willing to engage with companies in educating students for the labour market. The discussion that took place around the session on identifying new skills suggested some unease at the nature of the relationship that BMW had forged with higher education institutions. Issues of academic freedom surfaced alongside an implied criticism that BMW's approach was more about dictating to universities than co-operating with them. This was rejected by Dr. Anz. 'We don't buy professors', he responded, 'we co-operate with them. It is their decision in which field they work...'

5.2 Food for Health Ireland (FHI)

If BMW could be held up as a model of industry-led co-operation between universities and business, Food for Health Ireland (FHI) stands out as an example of state-mediated collaboration. FHI is a research network made up of three universities, one research institution and supported by four of the country's largest agri-business combines. These various elements were brought together under the umbrella of the FHI by an organisation called Enterprise Ireland, a state-funded agency. In effect, Enterprise Ireland acts as a facilitator bringing academia, research and industry partners together. Complex as its organisational composition appears, **Jens Bleiel**, a German native and now **chief executive of the FHI**, said he was drawn to the Irish partnership because it was a 'fantastic set-up...one of the best in the world.' According to Jens Bleiel, the uniqueness of FHI was sufficient to render irrelevant debates about industry-led versus market awareness and service to society. Here the funding structure was crucial: the FHI received €19.5 million in funding from Enterprise Ireland and €3 million from its industry partners. As Jens Bleiel remarked: 'If industry members are not happy, they will not pay their share. If they do not pay their share, then neither will Enterprise Ireland'. The simple truth of FHI is that if one of the partners fails, they all fail. Yet the work of the partnership is such as to limit the likelihood of failure. That is because FHI addresses the major health trends that are crucial to health and human wellness – obesity, heart health, immunity and the

healthy growth of children. It does this by developing new functional foods, whereby new products are produced using health enhancing ingredients.

The journey from development to market inevitably involves work across many disciplines, drawing on the strengths of academia and industry in different areas. The universities play a critical role in the invention, proofing, regulation and application stages of product development, while industry brings its expertise to bear in the areas of product concept, market research and sales. The cross-cutting nature of FHI helps soften concerns on either side of the academic-business divide. In the functional foods sector, Bleiel insists, ‘great science and marketing are both required to sell.’ A sense of shared purpose obviously helps in making the complex relationships involved in FHI’s work, but so too does communication. Bleiel stressed the importance of face-to-face meetings. ‘You have to bring everyone together in one room and create an objective for the whole team that really makes them work together. Because then we all know that if we fail here it’s not science that has failed, it’s not industry that has failed, it’s all of us together.’

5.3 AlmaLaurea

The **AlmaLaurea Inter-university Consortium**, based at the University of Bologna in Italy, resembles neither BMW nor FHI models. It is not industry-led or state-mediated. Instead, AlmaLaurea is a university-initiated venture that provides a valuable service to graduates, government and the labour market. **Professor Giancarlo Gasperoni**, a consultant to AlmaLaurea, explained that the aim of the Consortium was to provide national and regional governments and its member universities with reliable and up-to-date information on the evolution of their graduates’ academic careers and, afterwards, their working careers. It also attempts to foster graduate employability, trace their working achievement over time and promote their access to successful careers and lifelong learning. In short, AlmaLaurea is a service providing on-line graduate information, acting as a meeting point for graduates, universities and the business world. Established in 1994, AlmaLaurea now embraces 70% of graduates and holds 1.3 million CVs. Graduates who volunteer to participate are interviewed three and five years after graduation to see what their employment status is and how useful their college education has been to their career

development. The information gathered has proved a valuable resource. For universities, the consortium provides yearly reports on graduate profiles and allows for more informed decisions about programme content and skills trends. For the business community, AlmaLaurea offers an e-recruitment service that enables them to match graduates with jobs - half a million graduate profiles were sold in 2008. In addition, the value that graduates have placed on access to the labour market and further education opportunities is apparent from the high levels of participation.

As well as pointing up the success of AlmaLaurea as both a statistical observatory and a means of improving the access of young Italians to the labour market, it was significant that Professor Gasperoni also highlighted the prospects for research on new skills. By building on the existing strong relationship of trust between employers, the universities and their graduates, AlmaLaurea is, for instance, planning to conduct specific surveys of older graduates who now occupy consolidated positions in the labour market. 'They could tell us something that is empirically founded in regards to the needs of the firms in which they work' Professor Gasperoni remarked. Among other initiatives is a collaboration with Excelsior³ which aims to forecast short-term workforce needs. Perhaps most importantly, AlmaLaurea is looking to deepen its international dimension. AlmaLaurea was, Professor Gasperoni maintained, 'a practice that could and should be imitated in other countries and adapted to national needs. Because, if such large databases existed in other countries, all other countries and their graduates and their businesses would find advantages. It would foster the placement of graduates who can work abroad...There is {currently} scarce information on employment opportunities abroad...Greater integration of labour markets through vacancy flows is one way the international dimension could be deepened.'

³ <http://www.chamberofcommerce.it/inglese/excelsior-.asp>

6. Bridging the gap with SMEs

‘Go to your local SME. Talk to them.’ – Michael Kadera, Director of the Czech Business Representation to the EU

Forging a relationship with higher education institutions may be common for large multinational companies, but not always for Small and Medium Enterprises (SMEs). There remains a difficulty in getting SMEs involved with partnership and relationship building with higher education. As **Tony Donohoe, of the Irish Business Employers Confederation (IBEC)**, told the panel discussion of the opening session: ‘You expect the Intels and the Hewlett Packards to engage with universities, but we’re not seeing that reflected at the SME level.’ **Brendan Burns**, an employer and member of the European Economic and Social Committee, reinforced the point, suggesting that many smaller employers struggled to engage with the language used by academia, while academics didn’t put enough value on what a business is actually trying to do. More needs to be done to get smaller employers to engage with education by helping them identify and communicate what they need. **Professor Giancarlo Gasperoni** pointed out that this gap is a serious concern for Italy, where, as in many other European countries, SMEs are a dominant feature of the economy. European Business and University Co-operation could not be thought to be successful until companies of all sizes have access to the kinds of partnership that larger companies have already developed. However, there was also a need for realism. As **Dr. David Lloyd** of Trinity College told the closing session of the forum, there were some SMEs who would have limited use for a partnership with higher education. Universities needed to focus their attention on identifying the SMEs with most potential for really productive partnerships.

The forum heard persuasive evidence that the problem is not that SMEs aren’t interested in building partnerships. **Margarete Rudzki of Eurochambers** told the conference that her organisation had brought together 750 SMEs and found that more than 90% wanted to have a relationship with a Higher Education Institution and to have some input into the curriculum. Significantly, their research indicated that smaller businesses also wanted graduates to have the same kinds of ‘soft skills’ or competences that were earlier identified as those valued by the larger employers.

They also suggested that one skill that universities should develop in their students was the ability and willingness to go and look for good jobs with SMEs. A related point was made by **Christina Linderholm of the Swedish Federation of Business Owners**, who pointed out that when we talked about new skills for new jobs, one of the skills we should be encouraging is the skill of making your own job. Encouraging entrepreneurship in students needs to be a key part of developing their skills and attributes because entrepreneurs make new jobs for themselves and others. In that way, the next generation of SME entrepreneurs will be people who naturally associate business success with partnering with education. In terms of how universities can make creating partnership easier for SMEs, **Gilda Rota** from the University of Padua suggested that, in their experience of arranging 12,000 internships with SMEs for their students, companies' most pressing need was an obvious contact point within the higher education institution because they don't know who to contact. An additional idea to spark the creation of new partnerships came from **Jim Devine, President of the Institute of Art, Design and Technology at Dún Laoghaire**, who suggested that innovation vouchers can be given to smaller businesses, which they can cash in with any higher education institute who can help them with a research project.

The other positive note from the conference was that in terms of developing good relationships between SMEs and educational institutions there is plenty of helpful research and examples of good practice out there. **John Murphy** of Cork Institute of Technology suggested that the research of the REAP project, indicated that job placements represented a great first step for universities in developing a relationship with SMEs. So much of the innovation and entrepreneurship that universities want to be involved in happens in these SMEs and REAP's advice was to use the job placement as a stepping stone to a fuller partnership. **Dr. Lauri Tuomi** of HAAGA-HELIA University described the success of their 'Symbio' project, where students work with SMEs and with regional organisations in a half-year course to develop their own ideas. By October 2009, three hundred students had taken the course and it had produced a series of success stories. Students had taken their ideas into real-life collaboration with these companies and some had secured jobs with the companies whom they had teamed up with. **Michael Turley** of the Digital Enterprise Research Institute (DERI) in Ireland added that their experience was that it was possible to partner with the big multinationals and also with SMEs on applied research projects.

Perhaps the final word on the subject should go to **Michael Kadera, Director of the Czech Business Representation to the EU**, who commented that the university-business forum could only set out policy objectives, but it was in the area of implementation where there was 'room for improvement'. There was a need for everyone to translate the good ideas they heard at fora like that in Dublin into real approaches. 'Go to your local SME' he suggested to the attendance, 'Talk to them.'

7. New Skills for New Jobs: Case Studies in Regional Development

‘...those programmes were the foundations for success, and today, success is surviving.’ - Niall McEvoy, Industry Liaison for IT Sligo

As well as setting out the potential for building stronger links with SMEs, there was also evidence of how co-operation between higher education and business can drive the development of new skills and new jobs in Europe’s regions. More than one speaker made reference to the strength of European diversity and how the new skills for new jobs agenda fitted with this idea. **Professor Finbarr Bradley** spoke of the growing importance of local characteristics in a globalised age. ‘An emerging paradox is that in a world of global markets, rapid transportation and high-speed communications, location and culture are becoming more, not less, important. The local matters more than ever. Advantage lies in difference captured by special places and shared values. Being distinctive and thinking differently enable a community to be creative and innovative. Sustainable competitive advantage comes from resources unique and difficult to imitate.’ Underlining the value of the community innovation outlined by Professor Bradley, the seminar on regional development heard examples of successful collaboration between local or regional industry and their neighbouring higher education institutions. The contributors demonstrated not only that better cooperation between higher education and employers is an indispensable ingredient in producing the skilled workforces necessary for regional development but also outlined best practices that apply to all partnerships between business and education. Furthermore, these models of successful collaboration underscore the important point that for many businesses, an active working relationship with higher education institutions is as essential to their functioning as access to banking facilities, sources of energy or good communications.

7. 1 Dragon Innovation Partnership, Wales

The Dragon Innovation Partnership is a collaboration between three universities in the South West of Wales - Trinity University College, Swansea University and Swansea Metropolitan University. The Partnership’s aim is to build real relationships between the three universities and the businesses and employers of the South West Wales region. Their message to the conference was one that found many echoes over the two

days: there is no one-size-fits-all solution to partnership. To build real relationships, universities and business have to be willing to engage in lots of ways and on lots of levels. To that end the Dragon Partnership champions a wide range of different programmes including the Go Wales Student Placements, Knowledge Transfer Partnerships and Direct Consultancy. **Dr. Liz Wilson**, who leads the development of the work-based learning Professional Practice Framework at Trinity University College, Carmarthen, emphasised the point that in regional development you have to work with the employers who are actually there – if there aren't any multinationals, then universities need to target small enterprises or the public sector. The Dragon Partnership's experience has been that for co-operation to work, universities need to speak the same language as employers. Part of the Partnership's success has been in simply being an easy first point of contact for businesses who are interested in forging links with one of the partner universities. Once that contact has been made the Dragon Partnership works closely with the employer to work out which part of the university best suits the employer's needs. The universities then aim to be as flexible as possible in providing the right training and development in the right format. The whole process is designed to remove the obstacles that employers often encounter when trying to develop a useful relationship with an academic institution. Of course, in South Wales, as in many regions in Europe, speaking the same language as the employer isn't just an expression. The Dragon Partnership also cater to their local employers by making the Welsh language an integral part of everything they do, another example of making Europe's diversity a strength.

Dr. Wilson introduced one excellent example of how to develop a relationship with employers with the aim of developing new skills in workers already in employment in the form of the Professional Practice Framework (PPF), launched in May 2009 after a consultation process with local employers. The framework encourages people already in work to engage with a Higher Education Institution to develop new skills by giving them credits for their prior learning and work experience. One useful idea they developed is that the PPF is staffed by experienced people brought in from outside academia – called Workforce Development Fellows. This increases the University's contact with the world of business. The framework also allows students to use skills and experience developed in any work area to build credits towards qualifications in other areas.

For the Dragon Innovation Partnership, encouraging new skill development in people already in the workforce also has to involve accrediting the training that employers are already doing themselves. They have had a lot of success doing this with public sector groups like local councils and police forces. In their experience the key to successful accreditation of prior learning is about being flexible but also making the accreditation process rigorous, transparent and fair. Candidates put in a claim for credits based on their prior learning. To encourage them they get academic credit for doing the work necessary to prepare the claim. By ensuring that each qualification requires that new learning is added to the credits given for prior learning the process strikes a balance between acknowledging the strengths built up by people in the workforce with the need to add new skills and competencies.

The Dragon Innovation Partnership has found that the academic institution has to be flexible in lots of ways. Students can enrol in their courses at any time of year and start working straight away. Much of the delivery is through the virtual learning environment, some of it done in the workplace; some is done entirely by the employer. 'The delivery is very much suited to the needs of the employers and the participants' Dr Liz Wilson explained. 'What's been best about this for me is working in partnership with employers. I'm at the university now perhaps one day a week and I'm out with employers the rest of the time. We're using the employers to actually do the teaching on the programme when it's been validated, because they're the specialists here.'

7.2 Masonite Ireland

Masonite Ireland manufactures door skins that are exported internationally from its facility in Carrick-on-Shannon in the North-West of Ireland. It's a major employer in the region, so when, in September 2001, the Masonite Ireland factory faced closure unless it started making a profit, its survival was hugely important to the regional development of the North-West. The company had to improve their productivity quickly and they made the strategic decision that the best way to do this was through an increased commitment to the training and developing of their existing staff. In the Institute of Technology Sligo they found a regional partner who had the necessary educational expertise and the flexibility to offer cost-effective training options which would suit the 24-hour operation of the factory. If the employees couldn't get to IT

Sligo to study, then IT Sligo would come to them. Masonite and IT Sligo collaborated together to tailor a curriculum centred on the electrical and mechanical engineering skills and competencies that Masonite staff needed. Then they brought the campus to the factory to deliver it.

As **Maria Cosgrove**, current **HR Manager with Masonite Ireland** made clear, the partnership had measurable benefits for both the company and its staff, and by extension the whole region of North West Ireland. In 2002 the factory had been fourth out of eight Masonite facilities worldwide in terms of productivity. By 2007 they were number one. In a clear example of how up-skilling staff can lead to new types of jobs, the new expertise brought to Masonite by IT Sligo's training meant that the Carrick-on-Shannon facility was given a Research and Development function within the larger Masonite group. The staff who took part in the programmes also benefited. A number were promoted to senior positions within the company, including the Senior Production Manager and the Manufacturing Manager. In turn, Masonite Ireland had one of the lowest staff turnover rates within the group, while staff who graduated from one of the three programmes but later left the company have proved to be far more employable thanks to the transferrable skills and qualifications earned. In fact, **Niall McEvoy**, former **HR Director for Masonite Ireland and now Industry Liaison for IT Sligo**, told the conference that in today's difficult economic conditions the benefits from the relationship with IT Sligo were even more far-reaching: 'I would go so far as to say that the four training programmes have kept Masonite Ireland going. I would isolate them and say that those programmes were the foundations for success, and today, success is surviving.'

Both Masonite Ireland and IT Sligo emphasised another crucial outcome from their experience. Both partners must keep learning from the relationship so that they can adapt to changing circumstances. In the current economic environment solutions from even a few years ago need to be redeveloped to offer employers like Masonite lower-cost training and development support. Courses that were delivered in the Masonite facility in the early years of the partnership are now being offered as online learning for example. IT Sligo took what it learned from the pioneering partnership with Masonite and applied it to new partnerships with many of the region's other employers, increasing their part-time student numbers from 5% of the total to 30%.

As **Richard Thorn**, former Director of IT Sligo, told the discussion after the seminar: 'The learning we got with Masonite was transferred into other relationships. The more often you do it, the better you get.'

7.3 Central Denmark region

Having looked at how cooperation can encourage regional development from the point of view of universities and business, **Lars Vildbrad, Deputy Director of Regional Development for the Central Denmark region**, offered the seminar on regional development a new perspective - how government can drive a successful relationship between education and business. Since 2007, Denmark has a completely new structure for local government, with the country being divided into five regions. The higher education system also been significantly restructured to conform to the new regions. One of the key features of the new regional structure was the creation of a 'Growth Forum' in each of the new regions. The Growth Forum, made up of elected representatives, heads of Higher Education Institutions and business and union leaders, is focused on encouraging education and skills development, innovation and IT, entrepreneurship and business development, and rural development. The Growth Forum is very clearly tasked with actively encouraging practical projects which contribute in any of these areas. Indeed, one of the seminar's attendees, **Yvan Tyrsted of IDEA (International Danish Entrepreneurship Academy)**⁴, told of how he'd used money from one of the Growth Forums to fund a successful project developing entrepreneurial skills in students that now runs in thirteen centres.

Each of the new regions also has an administration whose task it is to drive regional development. The region funds a lot of the projects that encourage partnerships between Higher Education and businesses. Like the Dragon partnership in Wales, the Danish experience has been that it is important to offer a wide variety of different programmes to encourage partnership and skills development. Successful programmes they have championed include encouraging students to become entrepreneurs and encouraging foreign students to stay in Denmark to add their skills to the Danish workforce.

⁴ <http://www.idea-house.dk>

Another important and successful feature of the new system is that companies in the region are given a single point of entry for getting involved with the region's second-level educational institutions. This saves the companies a lot of effort looking for a suitable partnership and makes them more willing to engage. Once contact is made the educational partners help the company to make an educational plan for their staff. To encourage the partnership the regional government pays the educational institute for working on the plan.

In Central Denmark, as in so many of Europe's regions, a major challenge for regional development is ensuring that businesses in more remote areas of the region have access to the new skills that come from partnership with educational institutes. They've tackled this by developing small campuses out in the regions and by sending students on placements in small groups from the universities to smaller towns.

8. Curriculum Development

'Entrepreneurship cannot be taught from 5-6 in classroom B3 on the 4th floor' – **Jordi Currell**, Director, DG Education and Culture, European Commission

One message that emerged strongly from the conference was that if Europe is really to develop the new skills and competencies it needs for the innovation age, then higher education will need to embrace new methods of teaching and learning. The conference heard many voices from the frontline of skills development argue that the traditional methods of university teaching are not effective in developing key skills and competencies like innovation, entrepreneurship, problem-solving and working collaboratively. As **Dr. Martin Curley**

(right), Director, Intel Labs Europe, told the conference's closing session "the view from industry is that the old tools and the old ways of doing education are falling apart in terms of its ability to address the needs." The rapidly changing nature of skills



demands also means that if universities are really to influence the skills development of the workforce, they must engage with those already in the workforce. Driving and accrediting further skills training for people who've already left higher education, or who never attended, is also an urgent need. As **Professor Gillian Nicholls** of Salford University suggested, it's through the area of curriculum development that these challenges can be tackled.

Two of the skills or competencies that were identified by the conference as crucial to the future success of Europe's workforce were innovation and entrepreneurship, but there was a general acceptance that, while these were not new qualities, the traditional teaching style of universities did little to encourage their development. However, as **Dr. Martin Curley** also pointed out, there were universities out there who were obviously doing a good job of teaching it in practice. Like any business, what was now required was to follow up that innovation with imitation and mainstream those practices. In terms of those practices, **Professor José-Ginés Mora** presented the

conference with research based on a robust statistical model that demonstrated that lectures, written assignments and teaching methods where the teacher was the main source of information did nothing to develop the key competencies associated with being an innovator. Conversely, project or problem-based learning and group assignments contributed strongly to developing innovation competencies. This was reinforced by **Dr. David Lloyd** of Trinity College, who argued that ‘I don’t think you can pick up a book and just pop out the far side as an entrepreneur. So it is going to be about bringing in people from outside the universities who have those stripes on their back, to engage in the storytelling, to engage in the hand-holding and mentoring of students who have ideas, and to run it through case studies and the exploration of the journey.’ **Dr. Lauri Tuomi** of the HAAGA-HELIA University in Helsinki took this idea even further, arguing that their programme aims at creating a real-life environment totally focussed on encouraging innovation, where learning takes place with the goal of establishing a continuous flow of innovation. To do this means challenging the existing structures of universities and developing new ways of teaching.

8.1 Learning by doing

‘There needs to be more learning by doing and less classroom teaching in all areas.’ That was the verdict of **Professor Finbarr Bradley** and it was echoed across the forum’s proceedings. Indeed, the forum heard persuasive evidence that learning by doing through engagement with problems from the real world was a crucial tool in developing the new skills Europe needs. In response to the deficit in skills around analytics, SAS entered into collaboration with three universities and launched the Advanced Analytics Institute, which takes in graduates and analyses real-world problems from the public sector. The idea is to drag research out of the universities and into the real world of business.

Professor Matthias Eickhoff introduced the **COEUR Project**, aimed at developing the capacity to generate ideas in students, which is also very much based on the ideas of learning by doing rather than traditional teaching. In the COEUR process students engage with real-life problems and are given a challenging workload with tight time pressures and various factors which create uncertainty. Within this atmosphere students are not taught and the process is not controlled by those in charge. Instead,

the students are left to learn from the process and the role of the organising staff is reduced to that of a facilitator. The simple idea is that the students should be the 'owner-players' of the entire process. Professor Eickhoff asked the provocative question as to whether universities were actually even designed to allow entrepreneurship.

Dr. Anne Flierman of the European Consortium of Innovative Universities suggested that an extension of the learning by doing theory was that universities need to encourage spin-off companies as a bridge between university and business. One limiting point here was forwarded by **Professor Paul McCutcheon, University of Limerick**, who suggested that many learning by doing programmes could be expensive to run, especially in an era when funding was an issue. He also advised that proper accreditation of all learning by doing, and indeed all partnership work, is essential to encourage students and staff to take them seriously. As far as possible these activities should be integrated into the normal learning style of the university and not special modules divorced from the rest of the learning experience.

8. 2 Multiple Disciplines

Another area of curriculum development which was mentioned many times at the conference was the need for universities to encourage multi-disciplinary studies, an area which **Tony Donohoe of IBEC** suggested they were not embracing very enthusiastically. This was of particular concern because many speakers from both education and industry identified the ability to be comfortable across a range of subject areas as a key competency for the future. In fact, **Dr. Anne Flierman** identified the ability to keep learning and multi-disciplinarianism as the two crucial skills students needed. **Dr. David Lloyd** of TCD emphasised that a key aspect of this was ensuring that part of students' experience should be learning to work with people from different disciplines. This was a basic competency of the so-called T-shaped individuals that employers wanted. The COEUR Project again offered a good example of how to put this theory into practice. It divides students into multi-disciplinary and diverse teams before they are tasked with solving real-life problems.

8.3 Work Placement

One area of curriculum development that many universities have incorporated successfully is providing work placement as part of the student learning experience. **Una Halligan**, of the Irish Expert Group on Future Skills Needs noted that in her experience employers have always been much more inclined to take in graduates from universities that had a work experience element built-in to the curriculum. While it was accepted by many at the conference that work placement was at the lower end of what could be achieved in terms of partnerships between universities and business, there was also a very real belief that placements had a continued relevance for developing students' ability to apply their knowledge to the real world and as a starting point for even more productive relationships for universities. **Peter Mannion, President of the Union of Students in Ireland**, concurred: 'I think it's very important that universities be innovative and creative with work placement. Because they can be first steps, baby steps maybe, on how to create links between industry and the universities.' Mannion was confident that students would react positively to any such initiatives on the part of their universities. Students, after all, were 'open to change and innovation', a point which he claimed was borne out by their embrace of Erasmus, the programme that enabled them to acquire experience of a new country and a new culture of skills. For her part, **Professor Gillian Nicholls** believed that work placements brought benefits to both students and the cause of partnership. She warned, however, that universities will have to work harder to find sufficient number of work placements for their students in a contracting economy.

8.4 Lifelong learning

Possibly the most thought-provoking statistic of the two days was that offered by **Andrew Hamilton, Deputy Secretary, Northern Ireland Department for Employment and Learning**, who told the conference that if we thought about the workforce Europe needed by 2020, then 80% of that workforce is already in work. So if universities want to have any meaningful impact on the skills and competences of that future workforce, they must engage meaningfully with the training and development of people already at work. **Professor Tom Collins** had already told the conference that to really embrace the model of lifelong learning, Higher Education will have to change much about the way it operates, including more open access policies, offering more part-time and modular programmes and an increased focus on

the assessment of prior learning and accrediting employer-led training. The Irish Minister for Education, **Batt O’Keeffe TD**, also made it clear that workplace learning would have to be part of the future for higher education institutions. The view from industry reinforced the point: **Addie van Rooij** of Hewlett Packard suggested that they found the 70-20-10 model for staff development useful: 70% of learning is done on the job, 20% through online learning and 10% in the classroom.

8.5 Accreditation

If the need for more lifelong learning means significant change for many universities, the conference also heard from a large number of university and business partnerships that offer excellent models for imitation. One of the most interesting was the partnership forged by the Institute of Technology Sligo and Masonite Ireland to develop accredited technology programmes for Masonite staff that were delivered by IT Sligo in the Masonite facility. The conference also heard several excellent examples of universities using accreditation of prior experience and learning as a way of engaging with people already in the workforce. **Dr. Liz Wilson** of the Dragon Innovation Partnership described their Professional Practice Framework, which balances the accreditation of prior learning with the acquisition of new skills. The Dragon Partnership has also experienced real success with finding rigorous methods of accrediting in-company training programmes.

8.6 Flexibility

Many contributors from the business side argued that the key to successfully engaging with people already in the workforce was flexibility. **Una Halligan** noted that the success of the accelerated technician programmes recommended by the Expert Skills Group in Ireland had involved universities being flexible about accrediting in-house training. **Tony Donohoe** of IBEC commended the Blue Brick initiative, run by the Institutes of Technology in Ireland as a good example of encouraging continuing education by being flexible. **Niall McEvoy**, formerly of Masonite Ireland and currently Industry Liaison with IT Sligo, suggested that the technology was moving so fast that companies and universities need to constantly re-evaluate their methods, but that blended learning offers both universities and employers the flexibility they needed. One interesting point suggested about the challenges of engaging with the need for lifelong learning was that many universities had a real resource in the

experience of their traditional adult learning departments, which wasn't being utilised as much as it should.

9. Evaluating Outcomes

‘Universities should be measured on how they serve society’ - Stephan Willms, Lisbon Council for Economic Competitiveness and Social Renewal

One current that ran through all the sessions of the conference was the need for new ways to evaluate and measure the business partnership activity engaged in by higher education institutions, and indeed, to reassess the way in which we evaluate higher education as a whole. A number of contributors made the point that until partnership activity with business was given something close to equal status with research and teaching in universities, it would always struggle to reach its full potential. This was applicable Europe-wide as the ranking of universities is based almost heavily on their research and publication records. There was an acceptance that in terms of developing the skills and attributes identified as crucial in developing Europe’s smart workforce, some of the assessment within universities was not well focussed. **Professor Tom Collins**, for example, suggested that in the Irish system at second and third level, students were over assessed, assessed in the wrong ways and assessed for the wrong things. **Dr. Gerhard Riemer, Federation of Austrian Industries**, suggested that as we move towards a more rounded evaluation system for universities we need to look outside Europe for benchmarks as well. Other countries, such as Japan and the USA, are doing these things better than we are in some cases.



(From left) Jordi Curell, Finbarr Bradley, David Lloyd, Gerhard Riemer, Anders Flodström, Martin Curley

Stephan Willms, Lisbon Council for Economic Competitiveness and Social Renewal, argued that in future Europe's universities should be measured more broadly on how they serve society – how many jobs they create, do graduates get good jobs, how many graduates does the university produce, do they support low qualification students and facilitate life-long learning. The conference heard from a number of people who offered examples of alternative ways of evaluating how impactful a university really is. **Dr. Anne Flierman** made the point that their consortium of innovative universities looks at the development of spin-off companies as a very useful measure of success – Twente University has established more than six hundred spin-off companies over the last twenty five years, creating seven thousand jobs in the region. **Professor Giancarlo Gasperoni** suggested that one very useful outcome of the AlmaLaurea project was the ability to evaluate university programmes based on employment outcomes and the relevance of the education received to the actual employment graduates found.

Professor Anders Flodström, EIT Board Member and University Chancellor at the Swedish National Agency for Higher Education, introduced the new system for evaluating the quality of Swedish higher education which will be coming in this year. The new system will have three stakeholders: students, the labour-market/business sector and the universities, and each stakeholder will have equal rights to the quality of the educational programmes. The quality system will evaluate educational programmes in Sweden using three indicators: one indicator for the performance of the university; one indicator will evaluate how well the skills the programmes develop fit into the labour market; and one will be the student's own opinion about the quality of the education they just went through. The ratings achieved by the universities under the system will then influence how much funding they get, so it will compel universities to focus more on the practical impact they are having on business and the real world.

The second area where Professor Flodström suggested change was needed related to his work with the European Institute of Innovation and Technology (EIT). The EIT has identified two problems with innovation in Europe in relation to the universities' contribution to the Knowledge Triangle. The first was there was a lot of talk about the interaction between research, innovation and higher education but there wasn't

enough action. The EIT believes that entrepreneurship on all sides is the key to getting the action needed. The second problem is that we've been talking about this for so long in Europe that we've forgotten that we need to measure impact. The key is to have a real mechanism, a score-card mechanism, to evaluate the impact of the knowledge and innovation communities we create, to assess how well they actually change what is going on in business and industry.

10. Conclusion & Recommendations

The Dublin forum on ‘New Skills for New Jobs’ brought together a large gathering from across the European Union and from all sectors of the economy. Over two days, the diversity of presentations and perspectives helped broaden the discussion to include issues of social and economic context, the role of the university and its relationship with industry, regional development, links with small and medium enterprises, curriculum development and the fostering of a culture of innovation. The forum underscored the importance of co-operation to all sides: contributors from all backgrounds – business, education, government agencies – spoke of how a close working relationship had the potential to deliver benefits to graduates, institutions, the economy and wider society.

Core principles

In forwarding an agenda for future skills requirements, the forum set out the following core principles. These provide a platform of understanding upon which policy across the relevant areas may be built.

- Europe cannot compete in a global market on the basis of cost. The sustainability of the European economic model must be built on innovation and the quality of its workforce.
- Business-education co-operation is even more important during times of economic difficulty than at times of prosperity.
- The creation of new skills demands a response that reaches beyond the walls of higher education institutes to include those already in the workforce.
- In responding to labour market demands, universities need to balance short-term responsiveness with a long-term focus.

The new realities

In addition to these basic principles, policy makers need to take account of Europe’s changed social, economic and political circumstances. The transformed economic

landscape compels change in the labour market, with implications for the role of universities and the societies in which they function.

- The higher education sector must address the causes and fall-out from the economic crises that have impacted upon European countries in recent years. This will require universities to be market-aware rather than industry-led.
- In promoting genuine knowledge-based societies, universities must become involved in national leadership and participate in the public debate on the shape that future success might take.
- The idea of job security will be replaced by that of employment security. Workers of the future must be prepared for multiple careers and will have to cope with rapid technological change.
- The society based exclusively on mass consumption is not sustainable - more emphasis needs to be placed on mass creativity.
- In a globalised, internet-based society, flexibility will be crucial – flexible services, flexible knowledge and its flexible application will become the norm.

Mapping a Future for Business Education Co-operation

If Europe is to create a true knowledge society, the relationship between universities and business will be at its core. The following points were raised in the course of the forum proceedings on what form this relationship must take and in what direction it must go.

- Universities should retain their independent role.
- Business and education should aim to use a common language to facilitate easier contact between them.
- Establishing a single point of contact makes it easier for business to approach universities and forge partnerships.
- There is no one perfect model of co-operation between business and the higher education sector. The nature of the relationship often depends on location, scale and purpose of business. Communication, trust and transparency are essential to any working relationship.

- More recognition should be given to the power of good example. Raising awareness of effective working relationships will encourage further contact between the worlds of business and education.
- Business needs to work as hard on the relationship as educational institutions. The success of any collaboration depends on an equal commitment from both sides.
- More SMEs would like to build partnerships with higher education, but struggle to make contact or understand how it might benefit them.
- Universities need to focus their attention on identifying SMEs with the most potential for really productive partnerships.
- Universities should look to foster relations with SMEs through internships, work placements, or possibly the use of a system of ‘innovation vouchers’.
- Universities need to be flexible in providing training and development in the right format.
- Evaluation of universities must take better account of the relationships forged with business. The evaluation of existing collaborative programmes will ensure a better use of resources.

New Skills for New Jobs: Responsibilities and Recommendations

Efforts to predict specific skills requirements have not always been successful. The accuracy of predictions can be improved by businesses and universities coming together to pool their ideas and experiences. However, the notion of what constitutes a skill is still highly contested. Rather than speak in terms of skills, many stake-holders prefer to talk of general attributes or competences. The following are key ideas to emerge from the forum in relation to the promotion of those competences.

- The responsibility for developing skills or competences was shared between industry and education. Whereas higher education should usually aim to develop broad attributes or competencies, employers usually needed to take responsibility for practical skills necessary for specific jobs.
- Universities are not expected to produce fully formed employees, but for effective partnerships, the balance of responsibility for skills development should be negotiated between higher education institutions and industry.

- Universities need to develop in graduates a capacity to continue learning.
- Universities need to foster a spirit of innovation and entrepreneurship in graduates.
- Universities need to encourage students to work collaboratively with people from different disciplines.
- In an age of innovation, both universities and business need to create environments that promote self-confidence and a sense of self. From this, imagination and inspiration can flow.
- In terms of research and development, the most profitable place for universities and industry to work together was in the area of applied research.

New Skills for New Jobs: Curriculum Development

In promoting the necessary skills or competences in an innovation culture, higher education needs to adopt new methods of teaching and learning. In many cases, the required competences are long-established and simply need to be adapted to modern environments. The forum heard that it could do this by embracing the following practices:

- Education programmes which recreate real life environments or which allow students to work on solving problems from the real world. Employers can participate by providing proper work environments or suitable problems for students to work on.
- Replacement of lecture-led education with an experiential-based programme of learning by doing. A particular problem with this approach is that, at a time of budgetary constraints, it is expensive to run.
- Learning by doing programmes need to be properly accredited to encourage staff and students to take them seriously.
- Multidisciplinary studies need to be encouraged. This would enable graduates to work more comfortably across subject areas.
- Work placements need to be built into the curriculum, making them part of the learning experience. However, finding placements for students may prove difficult in a contracting economy.

- Higher education opportunities must be brought to the existing workforce. More open access policies to include part-time, modular and blended learning programmes.
- Higher education institutes need an increased focus on the assessment of prior learning and the accreditation of employer-led training.