5TH University-Business Forum
Strategic Partnerships for Innovation and Growth: From Dialogue to Partnerships

Brussels, 4-5 June 2013

Forum Report
Disclaimer:
This report presents the main points and conclusions of the presentations, speeches and discussions from the University-Business Forum held in Brussels on the 4-5th June 2013. The report does not contain verbatim all that was said during the two days of the Forum. The information and views set out in this report do not necessarily reflect the official opinion of the European Commission.

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Introduction

The European Commission established the University-Business Forum to advance and facilitate interactions and exchanges between the worlds of academia and business by providing a European-level Forum for discussion, networking, mutual learning and showcasing good examples of university-business cooperation. The First University-Business Forum was convened in 2008 and the event has been held almost annually ever since.

The Fifth University-Business Forum followed the tradition of engaging high-level representatives from the university and business worlds: from projects; various initiatives; relevant national, European and international organisations; associations, public bodies and authorities, over a 1.5-day long conference.

This Forum provided an opportunity to focus on partnerships for innovation and growth - how partnerships, formed between universities, businesses and other key stakeholders, can influence a range of outcomes for the universities, students, businesses and the broader environment in which they operate.

The Forum was structured under the following four themes over eight sessions:

1. *Entrepreneurship*
2. *Promoting change and impact*
3. *People and innovation*
4. *Spotlight on Knowledge Alliances and Massive Online Open CourseWare (MOOCs)*
Highlights of the Fifth University-Business Forum 2013

Europe continues to face many challenges, including a fragmented innovation system, and high levels of unemployment, particularly amongst young people in southern Europe. At the same time, there is a skills shortage, with over two million unfilled job vacancies. Europe must continue to embrace reform, foster economic growth and increase its competitiveness on the global stage.

Addressing these issues calls for a much stronger involvement from the European higher education sector, which consists of around 4,000 higher education institutions (HEIs), 19 million students and 1.5 million academics. The University-Business Forum was established to advance and facilitate interaction and dialogue between the world of business and academia, bridging the cultural gap and developing common objectives and mutually beneficial relationships through closer cooperation. The 2013 Forum focused on developing partnerships for innovation and growth, and the benefits of collaboration.

Key points arising from the Forum discussions are:

• The importance of a continued focus on, and support for, university-business cooperation. Public-private cooperation is fundamental to addressing many of the issues of the severe economic crisis Europe continues to face. Cooperation is also a means of tackling the new forms of research, innovation, education and learning, which are increasingly international, interdisciplinary and intersectoral. Cooperation is a means to an end, not an end in itself.

• Past editions of the University-Business Forum have already instigated and supported a number of policy developments including:
  - The Knowledge Alliances: structured partnerships bringing together businesses and HEIs to stimulate innovation in, and through, higher education. With the support of the European Parliament, two pilot calls were held in 2011 and 2012, resulting in six pilot projects. Knowledge Alliances will form a major part of the educational programme within the forthcoming Multi-Annual Financial Framework (2014-2020) under which a further 200 Knowledge Alliance partnerships could be co-funded. The experience of the pilot projects has shown the challenges of developing projects that engage and benefit a wide range of stakeholders over a relatively short time.
  - The EC/OECD Guiding Framework for Entrepreneurial Universities which will be launched in October 2013. This guiding framework was designed as an online self-assessment tool for institutions interested in improving and/or assessing their performance across a range of entrepreneurial activities and parameters. The framework is not a benchmarking tool, but an instrument to support change and development, and provides information and guidance for those universities and HEIs wishing to become more entrepreneurial.

• The University-Business Forum highlighted successful partnerships, such as the Knowledge and Innovation Communities of the European Institute of Innovation and Technology (EIT KICs), and some competitiveness clusters in Europe. These are delivering mutual benefits to the partners involved, and encouraging joined-up approaches to the use of public funding to deliver maximum value. A number of issues were discussed in relation to university-business partnership development:
  - The framework conditions and instruments available for university-business cooperation have changed significantly over the last 30 years, and many take an ‘eco-system approach’; pooling the
assets of universities, SMEs and large companies together.

- Driven by open innovation and other external and internal developments (e.g. national and European agendas), universities and businesses have restructured their activities and ways of working along the research-education value chains.

- Different roles and values are assigned to the partners involved in cooperation activities. Partnerships require complementarity, and the most suitable partners are not always the leaders in the field.

- Cooperation is more than working together; it is about getting to know each other, respecting the differences in mission and goals, overcoming the issues of conflicting needs, recognising and trusting the expertise of the other and approaching problems from different perspectives and time constraints. Building trust between partners is at the heart of successful and durable collaboration.

- The University-Business Forum considered the importance of institutional diversity in European Higher Education. Understanding the diversity and variety of universities is essential, and these differences, complementarities and various types of expertise, can be exploited to maximise the benefits delivered to the different partners involved in collaboration. An example from the UK highlighted how large companies work with several universities in order to address their diverse needs in the best possible way.

- The University-Business Forum explored the complex issue of global and regional economies as a source of knowledge and partnership. The knowledge market is international, and many complex issues need input from global talent. Large businesses bridge the regional and global markets by having a global reach, as well as being rooted within their regional economies and adopting portfolio approaches to university-business cooperation. This means that universities have to raise their profile and improve the brand of their ‘product’; i.e. their capacity to form the talent of tomorrow and their research and educational offer to attract businesses.

- The University-Business Forum highlighted the important role of universities in developing entrepreneurs and the entrepreneurial mindset. For aspiring entrepreneurs there are many potential pitfalls along the road, from the first good idea to its final delivery to the market (e.g. fear of failure; inexperience and lack of credibility; finding a buyer for the product). HEIs can support entrepreneurship by helping graduates develop transferable skills and by providing a favourable ecosystem with access to the right facilities and external expertise. These conditions are not only important for start-ups and spin-offs, but also for students and staff from all disciplines who need to develop a more entrepreneurial attitude and skill-set.

- New themes have also emerged over recent years and are gaining momentum. Two of these were discussed at the University-Business Forum:

  - **Design as a key driver of innovation, competitiveness and growth.** A focus on design allows local solutions to be found for local issues stemming from greater global challenges. Design is not a last minute add-on but part of a holistic approach to innovation, combined with other forms of new knowledge and activity. When combined with technology and an awareness of the social environment, design fosters a shift from a purely knowledge-based economy to one which builds on localised stakeholder cooperation for sustainability.

  - **Massive Open Online Courses (MOOCs)** provide free higher education courses, online, without enrolment restrictions or physical barriers. They are proliferating fast, growing in popularity and
interest and changing the nature of the learning environment. MOOCs first took off in the US in 2011, led by Stanford University. There are now MOOCs being developed in Europe by, for example, Leuphana University in Germany and the UK’s Open University which has recently launched FutureLearn. Other universities, like EPFL in Switzerland have joined existing platforms (COURSERA and edX) to offer their own MOOCs. MOOCs offer platforms which can widen participation in education: they are seen as a vehicle for lifelong learning and allow for a faster and more responsive approach to content creation, addressing one of the pertinent issues on the future needs of education. Remaining concerns needing further discussion include: the MOOC business model; the relationship to traditional education and the qualification system; the relative effectiveness of MOOC teaching and learning methods; and the validation and recognition of MOOC accreditation.

• The University-Business Forum stakeholders demonstrate a broad understanding of how university-business cooperation works in practice. A key challenge for the future is to ensure that cooperation is developed across the full spectrum of innovation, research and educational activities. Future challenges for university-business collaboration include:

  - **Developing talent - skills awareness and supply**: specialist and generic knowledge, hard and soft skills – combining the ability to work across cultural barriers and environments; communication and entrepreneurial skills; taking a fresh approach and being sensitive to social responsibility - are all needed to increase employability and the ability to and keep find employment and to progress professionally. New graduates need strong technical competences in a given field as well as the ability to understand other disciplines and how they interrelate (T-shaped people).

  - **Developing new ways to measure the outcomes and impacts generated instead of the outputs**: New, multi-criteria-based measurement methodologies are crucial in enabling stakeholders to grasp the full extent of the benefits of cooperation and to better inform cooperation policies. This should result in greater transparency, comparability and more informed strategic choices, though there is no one–size-fits-all methodology.

  - **Quality assurance procedures** established to improve and reinforce collaborative initiatives such as internships and other related activities.

  - **Curricula informed by market needs and allowing for more flexible individual profiles**, while also addressing long-term objectives and societal demands.
Speakers, moderators and rapporteurs

Universities and research institutes

Prof. Karl Aberer (CH), Vice-President for Information Systems at the Ecole Polytechnique Fédérale de Lausanne (EPFL)

Mr Sergio Alonso Rodriguez (ES), Managing Director, Universidad de La Laguna

Mr Carlos Azorin Soriano (ES), International Projects Coordinator, CETEM

Prof. Giovanni Azzone (IT), Rector of Politecnico di Milano

Mr Nigel Carrington (UK), Vice-Chancellor, University of the Arts London

Prof. Manuel José Damásio (PT), Universidade Lusófona

Mr Todd Davey (DE), Manager International Projects, Fachhochschule Münster

Prof. Catherine Fehilly (UK), Associate Dean, Scholarship, Enterprise and Research, Staffordshire University

Prof. Giovanni Azzoni (IT), Rector of Politecnico di Milano

Prof. Marek Kwiek (PL), Director of the Centre for Public Policy

Mr Bruno Lanvin (FR), Executive Director, Initiative for European Competitiveness, INSEAD

Prof. Ir. Karel Ch.A.M. Luyben (NL), Rector Magnificus, Delft University of Technology, President elect CESAER

Mr Carlos Azorín Soriano (ES), International Projects Coordinator, CETEM

Prof. Karen Maex (BE), Vice-Rector Science, Engineering and Technology, KU Leuven

Mr Dimitris Mavrikios (GR), Project Manager, University of Patras

Prof. Maria Helena Nazaré (BE), President of the European University Association (EUA), Former Rector of the University of Aveiro

Professor Timo Pihkala (FI), Professor in Entrepreneurship, Lappeenranta University of Technology

Mr Tomasz Pyrc (PL), Deputy Director, KIC InnoEnergy, Co-location centre Poland

Ms Danielle Salvadori (UK), Director, Central St Martin’s College of Art & Design

Mr Helmut Schönenberger (DE), Director, UnternehmerTüm

Mr Felix C. Seyfarth (DE), Curator and Docent of the MOOC «Think Tank Cities», Leuphana University

Mr Mikkel Trym (DK), Director, Copenhagen Innovation and Entrepreneurship Lab (CIEL)

Sir Tim Wilson (UK), Former Vice-Chancellor of the University of Hertfordshire; author of the Wilson Review

Mr Lucas Zinner (AT), Vice-Director of the Research Services and International Relations Office, University of Vienna

1 Note: The country indicates the country of residence of the speaker
Policy-makers

Mr Ben Butters (BE), Director, EUROCHAMBRES
Mr Ciarán Cannon (IE), T.D. Minister for Training and Skills, Ireland, EU Presidency January – June 2013
Mr Jordi Curell Gotor (BE), DG Education and Culture
Mr Jacek Guliński (PL), Deputy Minister of Science and Higher Education, Poland
Mr Ludovico Monforte (IT), Lombardy Chamber of Commerce
Ms Doris Pack (DE), Member of the European Parliament, Chair of Culture Committee
Mr Dainius Pavalikis (LT), Minister for Education and Sciences, Lithuania, (incoming EU presidency, Jul- Dec 2013)

Mr Jonathan Potter (FR), Senior Economist, Local Economic and Employment Development (LEED), OECD
Mr Xavier Prats Monné (BE), Deputy Director General, DG Education and Culture
Ms Lucia Recalde (BE), Head of Unit - Higher Education & Innovation, European Commission
Mr Jan Truszczyński (BE), Director General of DG EAC
Mr Richard Tuffs (BE), Director, ERRIN
Ms Androulla Vassiliou (BE), Member of the European Commission in charge of Education, Culture, Multilingualism and Youth

Mr Ferdinando Beccalli-Falco (IT), President and CEO of GE Europe
Mr Jean-Luc Beylat (FR), President Alcatel-Lucent Bell Labs, Vice president of Pôle de compétitivité mondial Systematic Paris-Region
Mr Gábor Bojár (HU), Founder and Chairman of Graphisoft SE; Graphisoft Park SE; and Aquincum Institute of Technology (AIT)
Prof. Stephanie Fahey (AU), Lead Partner, Education Oceania at Ernst & Young
Mrs Uli Fricke (DE), Managing General Partner, Triangle Venture Capital Group
Ms Maria Garaña (ES), President Microsoft Spain; EIT GB Member
Mr Nuno Gonçalves (PT), Board Member, ZON Lusomundo
Mr Keith Herrmann (UK), Director Higher Ed Research, UK
Mr Richard Hudson (BE), Managing Director, ScienceBusiness
Mr Timo Kauppila (FI), Co-founder, Business Manager, Catchbox
Mr Richard Kirkwood (UK), Chief Technology Officer, Hewlett Packard
Ms Jana Kolar (SI), founder of Morana RTD, EIT GB Member
Mr Markus Lecke (DE), Head of Education Policy, Deutsche Telekom AG

Mr Sotiris Makrygiannis (FI), CEO of Eliademy
Mr Lennart Malmkōld (BE), Manager, Volvo Group Trucks Technology and Project Planning
Mr Simon Nelson (UK), CEO of FutureLearn
Mr Julian Oliver (BE), Secretary General, Euractiv
Mr Christian Reinaudo (BE), President & CEO, Agfa Gevaert NV
Ms Isabel Roig (ES), Managing Director of the Barcelona Design Centre (BCD); President of the Bureau of European Design Associations (BEDA)
Ms Jitka Schmiedová (CZ), Vice-President of People & Property; Vodafone Czech Republic
Mr Pekka Sivonen (FI), Director, AppCampus (Nokia, Microsoft, Aalto cooperation)
Mr Roland Sommer (AT), Director of Public Private Affairs, AVL
Mr Jan-Eric Sundgren (SE), Senior Adviser to the CEO, Volvo Group
Mr Roope Takala (FI), Head of Innovation Programme, Nokia
Mr Andreas Tege (BE), Vice-President, Government Relations, SAP
Ms Andrea Lisbona Vives (ES), Founder & General Manager, Touchland
Mr Jan Truszczyński (BE), Director General of DG Education and Culture welcomed participants to the Fifth University-Business Forum and was pleased to see the growing interest in university-business relations and interactions, as reflected in the strong presence of both academia and business representatives. Past University-Business Forum successes included recommendations, resulting in the launch of the Knowledge Alliances pilot projects and the development of the Guiding Framework for Entrepreneurial Universities. The Director General invited active contributions and stimulating debate from participants on the main Strategic Partnerships for Innovation and Growth theme of the 2013 Forum, particularly in the light of the inclusion in the new Multiannual Financial Framework (MFF 2014-2020) of partnerships between education and business.

In her opening speech, Ms Androulla Vassiliou (BE), Member of the European Commission responsible for Education, Culture, Multilingualism and Youth, emphasised the role and importance of university-business cooperation in the context of the economic and social challenges Europe continues to face. There is a high level of unemployment, especially youth unemployment in the Southern European countries (56% in Spain 62% in Greece), and at the same time there is a shortage of skills, including over two million unfilled vacancies. To address these challenges Europe must continue to embrace reform, foster economic growth and increase its competitiveness on the global stage. Furthermore it needs to invest in people, especially young people, in their skills, and in their ability to adapt to change and innovation. Addressing these issues calls for a much stronger involvement from the European higher education sector. There are areas of reform which have already been identified in the European Commission’s Higher Education Modernisation Agenda published in 2011, but there is still a long way to go.

The results of the first pilot projects of the Knowledge Alliances show that successful examples have been established. Knowledge Alliances are structured partnerships bringing together academia and business committed to delivering innovative teaching methods. They are expected to play an important role in supporting the reform of national higher education systems over the coming years. Furthermore, the European Commission and the OECD, with the help of an expert panel, developed a “Guiding Framework for Entrepreneurial Universities”; a tool that provides guidance for higher education institutions wishing to become more entrepreneurial. In her closing remarks the Commissioner emphasised the significance of the European Institute of Innovation and Technology (EIT) in changing approaches to innovation in Europe by bringing together research centres, businesses and universities in structured partnerships.

Mr Ciarán Cannon T.D (IE), Minister for Training and Skills stressed the importance and potential of the higher education sector in Europe – comprising around 4,000 HEIs, 19 million students and 1.5 million academics - in developing the right skills and fostering the innovation base that enables enterprise growth and maintains European competitiveness. Education, research and innovation are providing the fundamental bedrock for a future European economy; cooperation between higher education and business is key to realising these objectives. There are good practice examples emerging across Europe but we still have the task of ensuring that these examples become structural and systematic.

There has been a remarkable growth in the demand for ICT skills during recent years, and in Europe alone the shortfall of ICT professionals is estimated to reach almost 900,000 by 2015. While it is not possible to create this number of skilled professionals overnight, collective initiatives, such
as the Grand Coalition for Digital Jobs launched by the EC, or the Irish joint government and industry action plan launched in 2012, can bring key stakeholders together to take steps and develop jointly a talented supply of ICT graduates. Mr Cannon also underlined that whilst the development of specific technical skills is fundamental, it is equally important that graduates have the ability to be adaptable across a range of disciplines. They need to be equipped with core employability skills such as creativity, critical thinking, communication and the capacity to work in teams. The changing labour market emphasises the need for an even stronger cooperation between higher education and industry. The Minister called for the establishment of deep and lasting alliances between universities and business to ensure growth and sustainability across Europe.

Ms Doris Pack MEP (DE), Chair of the European Parliamentary Committee on Culture and Education, agreed with the scene set by the previous speakers in terms of the problems outlined, and emphasised the importance of EC initiatives in a field where the power lies with the Member States. Education, research and innovation are the key drivers of Europe’s future economy, and higher education has a crucial role to play in fostering sustainable growth. This potential needs to be strengthened through increased university-business collaboration but also through educating and training teachers, both in universities and in schools, which should be a high priority in the future. Ms Pack pointed out the role and importance of the regions, and that the full potential of interactions and partnerships between stakeholders can only be achieved through two-way communication. To maximise the potential of these partnerships mechanisms and management strategies need to be put in place, with funding and incentives, while bearing in mind that the role of higher education goes beyond the needs of the labour market. The Knowledge Alliances are a means to exchange information, bridge gaps between the worlds of education and business and address skills shortages. Knowledge Alliances will be further supported in the upcoming education programme. Ms Pack concluded by urging local, regional and national authorities to continue funding and exploring the interaction between universities and business, partnerships that build on two-way communication while at the same time maintaining education's role beyond the needs of the labour market.
Keynote address and round table discussions

Mr Christian Reinaudo (BE), President & CEO, Agfa Gevaert NV, reminded the plenary that industry, university and government are of equal importance in driving the changes in entrepreneurship, partnership and innovation. These changes are necessary to take Europe to the next level of economic performance. Industry and universities have opposite ways of working: the former being profit-oriented, driven by survival and short-term deadlines, with the latter being oriented towards longer-term projects and the urge for discovery and prestige. Different ways of working, however, do not need to be counterproductive: cooperation can be very successful if built on complementarities. Local, national and European decision-makers have an increasingly important role to play in creating the right climate and facilitating university-business cooperation. To take the case of Agfa, cooperation with the university sector has been decisive in coping with new market challenges. The digitalisation of the film technology market has required the company to move quickly and attract new talents and skills. Agfa has worked with prestigious universities and set up successful technology platforms in the graphics business and healthcare sector. This has allowed the company to develop technologies that are the growth engines of the business today. There is, however, still room for improvement. Questions remain, in particular around the tensions between short-term and long-term focus. The participation of SMEs, seen both as partner and competitor to industry, is another issue. Closer cooperation is needed to ensure the visibility of SMEs to industry, combining existing capacities and avoiding duplication. To close the gap between talent and industry needs, it is essential to ensure the integration of industrial experience in the final years of study. Agfa’s discovery programme trained some 45 interns from 20 countries in 2011. The programme is based on best laboratory practice, the development of soft skills, and training students to become experienced research and development (R&D) project managers.

Sir Tim Wilson (UK), Former Vice-Chancellor of the University of Hertfordshire and lead author of the Wilson Review, gave an insight into the changing university-business cooperation pattern in the UK. Despite their autonomous status, universities are the main players in the knowledge supply chain and need to align with the economic and societal needs of the economy and society. Collaboration is the key to ensuring constant interface and feedback in the supply chain and building on an integrated approach. In the UK context, universities are operating with a completely different mindset from ten years ago, when university-business cooperation was just about accepted. Today cooperation is expected and instigated by a new generation of university leaders. Impact has become a key criterion in the allocation of research funding by the government. Universities are now starting to explore the potential of cooperation but much more could be done. In particular, collaboration between university and business should fully embrace the knowledge-based economy, which depends both on research exploitation and skills transmission. There is an increasing awareness that graduates require generic skills as well as specialist skills to succeed in the labour market. There exists a large menu of schemes to ensure that graduates acquire the necessary entrepreneurial skills, ranging from work-based learning programmes, to internships, social enterprise projects, and entrepreneurship support for students. Employers themselves can be involved in the university for example, by providing advice on curriculum development, certification or professional body accreditation of programmes and corporate up-skilling. Differentiation of universities is a critical aspect if the many and varied needs of business are to be covered. Universities are
distinctive and specialise in particular niche areas. Differentiation is not only important at the global level but also locally, as diversity of local strengths allows universities to provide an integrated set of skills at a regional level.

Comments/issues raised in the discussion

- **How to encourage universities to cooperate?** Financial initiatives/financial sanctions; establish new leadership.

- **Graduates’ employment Key Performance Indicators (KPIs) in universities:** KPIs are essential to track the employment, wage and career trajectory of graduates, and better inform students and align their expectations with the reality of the job market.

- **How to improve the quality of internships?** Raise awareness of soft/generic skills; hire interns capable of adapting to industry; ensure flexibility in the duration, organisation and rules of internships.

- **Impact measurement:** is it possible to measure the impact of university-business cooperation through a standard framework?

The Round Table session was moderated by **Mr Julian Oliver (BE)** Secretary General, Euractiv. Introducing the session, Mr Oliver reminded the plenary of the constant need to be at the leading edge and anticipate the next market trends. He gave the example of online media business, which has shifted from the simple provision of information to a panoply of intelligence services, with mobility, interactivity and digitisation becoming core activities of the sector.

**Ms Maria Garaña (ES).** President Microsoft Spain; EIT Governing Board Member, stressed the importance of talent as the common denominator between business and academia and offered a series of recommendations. First, she warned about duplication of effort in entrepreneurship support. Each university, business and government has its own support programme and it is crucial to track results and promote the best programmes. More support should also be made available to SMEs to improve their technology, communication, HR and management skills. Second, graduates’ employability is a key element, as so-called soft skills are becoming hard skills. Third, companies, like universities, need to break down their internal silos as the areas that interact with universities are often those areas that are far from the commercial end of the business. Finally, Ms Garaña recommended focusing on four key elements: competition, differentiation, internationalisation and technological development.

**Professor Horst Hippler (DE).** President of the German’s Rectors’ Conference, presented the German perspective shaped by a long tradition of cooperation between business and universities. Cooperation with business allows universities to provide graduates with the skills that are needed in the business world. This is done through various mechanisms, including: recruitment of professors with an industry background; integration of internships in study programmes; dual study programmes financed by industry; development of career services for graduates; strategic partnerships with large companies; and
shared industry/academia professorships (as in Karlsruhe University). Professor Hippler reminded the plenary of the importance of the freedom of science, and expressed his concern that associating business with curriculum development could create too much dependence on short-term business expectations. Likewise, internships are a good thing when integrated with curricula, but they should not become a way for business to hire cheap recruits. A key facilitator in Germany is the joint working group that brings together members from the German employers’ association and rectors’ conference to discuss university-business cooperation. Professor Hippler concluded by noting the progress that has been made, but underlined that there is still room for improvement in the way universities prepare students for life after graduation and make sure their talents are exploited.

Mr Jan-Eric Sundgren (SE), Senior Advisor to the CEO, Volvo Group stressed the importance of the education system as the prime supplier of industry. It is through the graduates produced by universities and higher education that companies are able to maintain their competitive edge. The coexistence of high unemployment and a rising skills gap in Europe indicates that more cooperation is needed, and there should be a greater focus on education. Mr Sundgren highlighted the role of respect and trust, as well as the importance of prioritising areas for cooperation, if necessary through greater leadership. Staff interactions and internships should be encouraged. Universities and business should share their long- and short-term strategies and objectives and build up common merit and reward systems that go beyond publications. Closeness and strength of interactions matter, and future cooperation should be guided by excellence in research and entrepreneurship. It is also fundamental to build strong alumni networks in universities. Mr Sundgren called for the development of a common culture with shared values between the business and university sectors, and encouraged the dismantling of the existing discipline silos in universities for more appropriate structures. He concluded with the need for industry to create a strong relationship with universities, research institutes, and their supply chain, and for long-term interactions with policymakers, customers and NGOs if they are to invest in ‘disruptive innovation’.

Professor Maria Helena Nazaré (BE), President of the European University Association (EUA), Former Rector of the University of Aveiro, addressed the challenges faced by the higher education sector at a time when institutions must demonstrate both a global outreach and a strong local/regional presence. Universities need to anticipate the future and adapt to emerging trends such as open access by, if necessary, breaking down silos in their structures. Their role is to supply the job market with graduates and PhDs with transversal skills, and to do so they need to realise that building university-industry partnerships represents new opportunities to change curricula, and foster entrepreneurship and intersectoral mobility. The EUA has developed several projects to promote cooperation among its members. Recent work includes a set of assessment tools to evaluate the desirability of entering into partnership and the success of partnerships. The EUA has also organised workshops in local areas with senior managers on the conditions of success, and the benefits of cooperation, and in 2014 will update its Responsible Partnering Initiative, intended for universities and businesses to measure the success of their interactions.
Comments/issues raised in the discussion

- As an introduction to the discussion, the moderator invited the Panel to reflect on what can the other side do better: forget stereotypes and admit that organisations have changed; build up confidence; develop common strategies for talent; promote changes in values through strong leadership.

- What is the best way to promote communication between universities and businesses? Negotiate at the start to clear up any problems; share experience and case studies; encourage the exchange of people between universities and businesses to develop a common culture.

- What investment is needed to break down the silos between research and education in universities? The dichotomy between the two does not exist in reality and should be broken down by educating graduates in a research environment. Not to forget innovation, which is another key mission of universities.

- How to get the right attitude for disruptive innovation in universities and how to transmit it to students?

- How can business work with universities to increase graduate employability, fight youth unemployment and prevent a brain drain? Develop more and better vocational education and training; focus entrepreneurship support on the most successful programmes (e.g. EIT); bring SMEs closer to universities; invest in education despite budget cuts.

Commissioner Vassiliou added two points to the debate. She stressed the importance of initiatives like the EIT in breaking down silos between research, innovation and education. Silos are not only present in universities and companies, but also in the European Commission itself, and cooperation between DGs is crucial to addressing these silos (e.g. four Commissioners are working on the alliance on ICT jobs). Commissioner Vassiliou also informed the plenary of the launch of a new multidimensional university ranking system (U-Multirank). This ranking system is aimed at offering an alternative to those that are focused mainly on research excellence.
Strategic Partnerships from Policy to Practice

Entrepreneurship

Entrepreneurship is important for the added value it can bring, and its potential impact at a number of levels: individual, institutional, economic and, more broadly, social. Higher education provides an ideal environment in which to develop and foster entrepreneurial qualities among potential entrepreneurs and enterprising individuals to bring about significant changes. Entrepreneurship is not just for students: it is important for graduates, professors, researchers and managers in universities, as well as in lifelong learning and continuing education and training programmes.

These parallel sessions focused on two aspects of entrepreneurship: ‘The entrepreneurial university’, ‘Bringing ideas to Market and Society – the creation of start-ups and spin offs’.

Entrepreneurial Universities in Practice - a guiding framework for self-improvement

In March 2011, the University-Business Forum put forward a recommendation to develop a guiding framework for entrepreneurial universities as a tool for learning and inspiration. In response to this, the European Commission and the OECD joined forces to develop an online pilot tool which has been tested by a number of universities in the last year. The tool serves as a guiding framework, generating results based on the answers given indicating the university’s current position, as well as providing recommendations and examples of how to improve and develop entrepreneurial capabilities.

This session of the 2013 University-Business Forum presented the latest developments of the tool, the reasons behind it and testimonials from pilot users. A final version of the tool will be launched in October 2013.

The session was moderated by Professor Paul Hannon (UK), Director of the Institute for Entrepreneurial Leadership at Swansea University, and former CEO of the National Council for Entrepreneurship Education.

Professor Hannon, a member of the expert group involved in developing the guiding framework, gave a presentation on the current developments at Swansea University where there are plans to build a whole new campus focusing on science, innovation and university-business collaboration where students and industry will be co-located.

Although this is only one example of how universities are now making serious investments in university-business cooperation, it underlines the importance of the entrepreneurial agenda in universities, and reiterates two essential elements:

- Looking at institutions in an entrepreneurial way
- Creating environments in which entrepreneurial behaviour is developed across all stakeholders

Universities need to prepare for a highly uncertain, unpredictable and complex environment in which there is a need for graduate entrepreneurs who will establish companies. Yet the majority of students will become employees, who nonetheless need to think and behave in an entrepreneurial way. Therefore, the main objectives should be the creation of entrepreneurial graduates, not graduate entrepreneurs and the guiding framework was designed as a tool to support and facilitate this process.

Ms Lucia Recalde (BE), from DG Education and Culture at the European Commission, gave a brief intervention highlighting the importance of hearing the views and impressions of the pilot users of the tool. She emphasised that the guiding framework is neither a benchmarking tool nor does it provide a clear and harmonised definition of an entrepreneurial university. The leading principle during the development of the framework was to capture the main features of an entrepreneurial institution, while acknowledging the diversity of higher education institutions and not to arrive at a one-size-fits-all definition. The guiding framework will
be developed further and improvements will be made based on input from its pilot users. The launch of the first operational version of the tool is anticipated for October 2013.

The guiding framework was developed with the OECD. Mr Jonathan Potter (FR), senior economist at the OECD, introduced the Local Economic and Employment Development (LEED) programme and the Centre for Entrepreneurship, explaining that the OECD has been working on this area of higher education and entrepreneurial universities for some time.

The importance of the topic is well reflected, on the one hand in Eurobarometer statistics which reveal that about 51 per cent of young people say they want to start a business, but only 31 per cent state they have had any relevant training. On the other hand, there is an emerging need for more entrepreneurial universities which are more creative and flexible in the environment in which they operate. Universities need to respond to the challenges of a knowledge-based economy, when traditionally their main task has been academic training. Governments are asking universities to adopt new approaches, and the OECD is supporting this by undertaking reviews with governments at local and national levels. The OECD is already using the framework in surveys with leaders of different universities, and intends to develop a set of activities to populate the tool in the near future.

Ms Rebecca Allinson (UK), Technopolis Ltd, gave an overview of the guiding framework, introducing the design, the main features and possibilities for use, noting that the tool is still under development.

The session also featured three testimonials from universities which participated in piloting the guiding framework during the summer of 2012.

Mr Sergio Alonso Rodriguez (ES), Managing Director of the General Foundation of the University of La Laguna, introduced the 200-year-old university and its region, one of the outermost of Europe. He emphasised the role of the university in a regional economy which consists of 1.1 million people, generates 70 per cent of its GDP from tourism, and has the problem of very high levels of unemployment. The university ecosystem is therefore very important, and fostering entrepreneurship and engaging students in a variety of entrepreneurial activities have been high on the university’s agenda for some years. With regard to the guiding framework, Mr Rodriguez pointed out that it is very helpful in diagnosis, analysis and underpinning decision making. It requires input from a wide range of university stakeholders. When using it, the socio-economic context has to be taken into consideration by the university, and financial support is needed to enable the implementation of change.

Professor Timo Pihkala (FI), Professor in Entrepreneurship, Lappeenranta University of Technology, introduced the three main pillars of the university’s new strategy. Lappeenranta University of Technology is a small university, located on the border with Russia. The university has recognised the need to focus on entrepreneurship, especially by combining technology with business. The new strategy is built around the following pillars: green energy, sustainable value creation, Russian relations and internationalisation. Professor Pihkala explained that the objectives of becoming more entrepreneurial, even in a small university, have to overcome such barriers as the silo structure and entrepreneurialism being seen as a threat. The change also involves politics, and this is where the guiding framework is useful. The framework is very systematic; it does not say you have to do anything in any specific order and the content is very interesting. Professor Pihkala pointed out that one has to be prepared to see results get worse in the second, third and fourth use of the tool as opinions become more sophisticated and challenging. Consequently, standardising appropriate measurements is going to be a challenge. For future refinements regarding the guiding framework it would be beneficial to see best practice examples, and to address the whole organisation, not just top management.
Mr Lucas Zinner (AT), Vice-Director of the Research Services and International Relations Office, University of Vienna spoke from the perspective of a university administration, emphasising that administration can contribute to the development of entrepreneurship. The University of Vienna is a very large institution with 3,300 employees, 6,700 academics, and 92,000 students out of which 25 per cent are international. Professors raise €70 million of income. The university has a high level of involvement in many collaborative initiatives with industry and a strong track record in spin-off creation and research result exploitation. Despite many successful examples there are still barriers to address, such as academic conservatism and the differences in terms of speed in adapting to changes. A key to success when fostering change is getting academic staff on board and understanding their mindset.

The guiding framework is a very useful tool for reflecting on what entrepreneurial thinking really is. There is also significant value associated with completing it and looking at the results. It should be made widely available within an institution to reach everyone in the university community, including researchers, teachers and personnel who are in daily contact with the students. It can generate a discussion on what activities are already there, and provide a basis for assessing what needs to be addressed by the institution.

Comments/Issues raised during the workshop

- Using the guiding framework does not make an institution more entrepreneurial; its power is in using it repeatedly.
- It can be used widely across an institution, as it does not contain discipline-specific questions, but applies a common approach. It helps in understanding what an entrepreneurial mindset means to different stakeholders - people have to make their own definition of what entrepreneurship means in their world, they need to come to their own conceptualisation.
- The guiding framework also has the potential to generate more consensus in an institution, as usually there are only a few professors or a small core of people who are interested in becoming more entrepreneurial.
- The guiding framework was designed for, and to be used by, universities. The OECD has been working with policy makers to help them to see how they can promote entrepreneurship in universities.
Conclusions of the session and lessons learnt from university testimonials (Spain, Finland, Austria) about the guiding framework:

- The guiding framework is useful because it systematically covers all aspects of university operations and organisation.
- It provides a consistent way of looking at institutions wishing to be more entrepreneurial.
- It leads to more comprehensive self-reflection for all stakeholders: Where are we now? Where are we headed?
- It does not define the entrepreneurial university. It guides but does not lead.
- The framework has built-in flexibility, therefore it can be used at different university levels, for different purposes (all institutional change-related).
- It has the power of repeated exercises: self-criticism may grow with greater knowledge and understanding of what constitutes an entrepreneurial institution, scores may drop despite progress.
- It is very important to consider ways of getting academics on board. How to convince all stakeholders to get involved and participate?
- In terms of the results so far, the pilot phase has been highly successful, but we need to consider how to move from ideas to actions; how to link the guiding framework to good practice, providing further assistance such as workshops, or other types of guidance.

Bringing Ideas to Market and Society - the creation of start-ups and spin-offs

Universities play an important role in fostering knowledge exchange with the environment in which they are embedded, and, in a broader sense, with the whole of society. There are different ways universities can choose to reach out and promote knowledge exchange within the existing complex innovation systems.

This session of the conference focused specifically on the creation of spin-offs and start-ups, showcasing a range of successful examples from different national backgrounds. The session explored, through working examples, how universities support the process of creating start-ups and spin-offs. In what ways do they encourage and engage their staff and students in this process?

The session was moderated by Mr Helmut Schönenerger (DE), Co-Founder and Director of UnternehmerTUM, who introduced the speakers, giving a background overview of the regions they came from.

Ms Andrea Lisbona Vives (ES), Founder & General Manager, TouchLand, is a 27 year-old entrepreneur from Barcelona. In her presentation Ms Lisbona Vives described how she became an entrepreneur, the obstacles she had to face and the barriers she had to overcome. She emphasised that, in her experience, the fear of failure is the biggest barrier to entrepreneurship, and therefore it is crucial to learn how to accept failure and not to give up. Young entrepreneurs have to face further difficulties due to being inexperienced and lacking the credibility of a track record. However, key success factors include having a good idea, assembling a motivated and competent team, being persuasive and persistent and, preferably, finding external support to help in the implementation of the idea. Ms Lisbona Vives found such help by winning a start-up competition that enabled the establishment of TouchLand, a company that now operates in nine different countries from an idea that started only three years ago.

Professor Frank Gielen (BE), Director Incubation & Entrepreneurship, Ghent University, explored in
his presentation the role universities play in entrepreneurial ecosystems and in the transfer of knowledge to society. Universities need to change and this change involves moving towards an entrepreneurial model which puts universities in an open networked ecosystem. The iMinds approach builds on this notion of a networked ecosystem which generates added value by exploiting the knowledge from different universities through the relationships established.

The establishment of this network has not been without challenges, and Professor Gielen pointed out the three main areas which needed particular attention. First, how entrepreneurship is positioned in the HEIs is very important, including the focus on skills development, particularly transferable skills and the ability to deal with complexity. Second, universities are gold mines for innovation, however, technology transfer procedures and attitude towards partnerships should be much more liberal and open to create less complicated access to know-how. Third, HEIs should use their graduates as ambassadors not only in the scientific but also in the business world. A significant proportion of PhD students will end up working for businesses, but they are trained to become scientists and academics, not trained for working for businesses. If this excellence in research were combined with strong entrepreneurial behaviour this should have a beneficial effect on businesses.

Mr Timo Kauppila (FI), Co-founder and Business Manager, Catchbox, provided another success story of a young entrepreneur. Mr Kauppila pointed out the three key phases one needs to go through to achieve successful implementation, and the potential support universities can provide to foster student entrepreneurship. In the first phase, the main question is how to create business ideas and bring together a team. Universities have numerous experts and students and putting together interdisciplinary teams with the right motivation can generate many innovative ideas – this is the Seed phase. The next phase is when the idea needs to be developed further and a prototype created, a minimum viable product must be built. This can be supported in many ways, for example, by the provision of expertise and coaching involving entrepreneurs and access to space and equipment. These are crucial elements in taking the idea further towards implementation – this is the Planting phase. The third, the Early Growth phase, requires finding customers and building additional capabilities. Universities can, once again, play a significant role by providing advice on, for example, intellectual property right-related (IPR) issues. Aalto University created a favourable environment and provided support for Mr Kauppila’s team to progress their idea throughout the three phases.

Mrs Uli Fricke (DE), Managing General Partner, Triangle Venture Capital Group, closed the session by describing her experience from a venture capitalist point of view, exploring what it means to be an entrepreneur. What are the key factors to success? On the way to becoming an entrepreneur Mrs Fricke stressed the importance of understanding the customers and the markets. Competition is global and the main competitor might not be next door. This market knowledge also provides the assessment basis for any further investment in scalability, which is essential for businesses to become really successful over time. Mrs Fricke pointed out that most companies fail because ideas are ill-executed, not because of the ideas themselves. The mindset that enables and pushes forward the day-to-day execution of an idea is critical. Therefore, while acknowledging the importance of a debate on universities’ contribution to the creation of economic and societal values from the great inventions and innovations at universities, she pointed out that this should be neither the starting nor the end point. Entrepreneurship is an attitude, and developing it by empowering students and encouraging them to think laterally should start much earlier, in primary and secondary schools.
Comments/issues raised during the workshop

• There are many well-established and successful approaches to creating a favourable environment which nourishes an entrepreneurial mindset, such as the Design Factories at Aalto University, where students and researchers are mixed together in shared spaces; or the project based approach at iMind or a European Space Agency programme that is aimed at creating economic growth and jobs by bringing together researchers who do not want to become entrepreneurs with those who have an entrepreneurial drive.

• In bringing ideas to the market, there is an important element still missing: the presence of venture capital. Views of workshop participants differed regarding the possible role of the EC to help in improving the access to capital. While some participants agreed that such help would be much needed, as nowadays access to finance is almost non-existent, others argued that it is up to the market to select the best ideas.

Conclusions of the session and lessons drawn from four examples in different business ecosystems

Expectations from universities:

• Do not limit education to academic skills only; focus also on transferable and transversal skills.

• Engage students in entrepreneurial programmes, involve them in interdisciplinary activities and research teams, but do not ask everyone to become entrepreneurs.

• Entrepreneurship comes from attitudes and learned skills and universities can play an important role in developing both.

• Lower the barriers between academic researchers and students e.g. through shared workspace.

• Encourage entrepreneurial mindsets early on, well before higher education, to develop entrepreneurial attitudes.

• Act as a strong supporter by providing advice and services e.g. legal counselling, coaching, establishing contacts with customers, acting as a first customer of innovative products for early start-ups to increase and build credibility.

• Provide access to space and equipment, meeting grounds, an encouraging atmosphere and institutional culture.

• Make sure that the 80 per cent of PhDs who do not remain in academia can cope with the business environment as either owners or employees.

Lessons for young entrepreneurs:

• Do not be afraid of failure!

• There are many good ideas around, but they need to be developed and executed in stages – seed, planting and early growth phases – all of which are critical for business success.

• Role of locality and role of globality - both are interconnected and need to be considered.

• Ideas and products are the key, but one must also remember that customers and markets, who are willing to pay and represent demand, are needed for success.
Promoting Change and Impact

Delivering Results: Assessing the outcomes of educational cooperation

There is still little information on the modes or extent of cooperation between HEIs and business across Europe. Few studies focus directly on the full breadth of cooperation types, with too great an emphasis on those modes of university-business cooperation offering more direct, measurable and promotable benefits such as in the field of research & development (DG EAC, Davey et al 2011). Less often discussed are the impacts of collaboration on the educational area, particularly curriculum development, skills and lifelong learning, and in the area of mobility. This session explored the rationale for education-based cooperation and the expected results and impacts from both the university perspective and that of the business.

The session was moderated by Professor John Goddard (UK), Former Deputy Vice-chancellor, Newcastle University.

Mr Adrian Healy (UK), Cardiff School of Planning and Geography, Cardiff University, presented a study launched by the European Commission on the outcomes and impact of educational cooperation between the higher education sector and the business sector. He explained that while most stakeholders value educational cooperation as much as research cooperation, the nature of the benefits of educational cooperation, and how they should be measured, is less certain. Where there is measurement, it is more consistently at the level of short-term satisfaction and quantitative results rather than the long-term, qualitative and intangible effects of partnering. Better measurement methodologies are fundamental if stakeholders are to improve their understanding of the benefits, guide their investment decisions and make more informed cooperation choices. The study is ongoing and should develop an assessment methodology for measuring the full breadth of outcomes and impacts of university-business cooperation in the field of education. A better understanding of the complexity and variety in the ways of cooperating (e.g. curriculum design and delivery, entrepreneurial education, continuing education) is expected from the study, together with an analysis of the wide-ranging nature of outcomes and variety of beneficiaries (e.g. university, business, students, industrial sectors, and the social economy).

Mr Gábor Bojár (HU), Founder and Chairman of Graphisoft SE, Graphisoft Park SE, and Aquincum Institute of Technology spoke about how to bridge that gap, between business and academia, which manifests itself in the different ways university and business measure their performance. While academics seek the recognition of their peers, businesses use key performance indicators (KPI) based on the satisfaction of their customers. A more user-centred approach to outcome measurement is needed in universities. Bringing education into a business environment is the approach taken by the Aquincum Institute of Technology. The Institute is built around the Graphisoft business park, and benefits from close proximity to the market and to users. The Institute offers a programme taught entirely in English specifically targeted at US students looking for experience abroad, providing students with a dynamic learning environment, small classes and personal mentoring.

Mr Roope Takala (FI), Head of Innovation Programmes, Nokia, gave a presentation on Nokia’s approach to ecosystem creation and partnerships. Even a leader in network and telecommunication services such as Nokia cannot afford to work alone but needs partnerships to create, develop and maintain services and innovation. In the global market, innovation comes from pooling assets to gain strength from diversity and the company engages the capabilities of a wide range of partners. Each partner has a specific role to play in the eco-system. While universities offer a broader, objective and impartial view and create inventions, SMEs can speed up the innovation process and focus on products, while corporations offer an in-depth understanding of specific markets and their networks. Nokia is involved in different types of partnerships programmes piloted at the
Mr Pekka Sivonen (FI), Director, AppCampus, presented an innovative entrepreneurship initiative in the field of app development, which could serve in the future as a model for cooperation in other industries. AppCampus, started in 2012, is a three-year mobile application accelerator programme jointly funded by Nokia, Microsoft and Aalto University. The programme fuses funding, coaching and go-to-market support, with the aim of accelerating knowledge, ideas and next generation business. One year into its implementation, 2,678 app developers from 95 countries have submitted proposals, of which 160 teams have been financed. Dozens of new companies have already been incorporated, creating hundreds of new jobs. The originality of the programme lies in its global reach. It brings talent from all over the world together at Aalto University - where the programme is based and managed - for a four-week coaching course, while offering go-to-market support in 200 countries. Based on speed and lean practices, the programme management is central to the success of the initiative. AppCampus is a successful example of creating mutual benefit for the university and the business sector. While it initially capitalised on Aalto University’s know-how in the field of telecommunication and how to run a global accelerator, as a result of the initiative the university’s own image and brand has now taken off internationally.

Mr Markus Lecke (DE), Head of Education Policy, Deutsche Telekom AG, presented a business approach to evaluating the outcomes of university-business cooperation. Deutsche Telekom is spending about €50 million a year on collaboration in education and has developed an assessment framework based on five dimensions: i) innovation for future products; ii) branding and image; iii) recruitment of highly-skilled staff; iv) training and further education of professionals and executives; and v) impulse for new business. Each of the five dimensions is further developed into a number of indicators, informed by questionnaires sent to partner universities. The result is a spider diagram summarising the profile of the cooperation in which Deutsche Telekom is involved. While the methodology is instructive in its own right, the use of the assessments is of greater interest. Typically, evaluation cycles take two years: one year for the evaluation and one year for improvement through partner dialogue and exchange. Unlike a pure review process, evaluation is developmental. One of the challenges of such a practice is the workload it generates for universities. Based on Deutsche Telekom’s experience, systematic evaluation practice is beneficial for both businesses and universities in that it informs mutual cooperation policies, while leading to greater transparency and comparability.
Comments/issues raised during the workshop

• **Need for connecting the different university and business perspectives.** Understanding why does business cooperate with academia and vice-versa.

• **Portfolio of partnerships**: how do businesses choose their partners and what can universities do to be more active in the cooperation game? Business experience shows that they do not cooperate only with top-ranking universities but that they also value other universities for their flexibility, customer-focused approach and entrepreneurship culture.

• **Workloads induced by evaluation**: What is the right balance between the need for information and the time spent on collecting information? Multiple KPI may be an impediment to collaboration and innovation.

• **What is the suitable level for developing educational cooperation KPI?** Like in business, the objectives stated at the central strategic level of universities may differ from the specific objectives shared by departments, individual academics and other stakeholders, including students.

• **Evaluation vs. rankings**: Evaluations should be about how universities can improve the way they cooperate with business. They differ from rankings which are purely judgmental. Evaluation is not an end in itself but should encourage stakeholders to raise their game.

• **Are the issues and perspectives similar for all type of educational cooperation?** There is no one–fits-all methodology, as the issues and criteria differ from one field to another. Cooperation develops organically over time. Different forms of cooperation have different approaches and timelines, which should be taken into account in evaluations.

Conclusions of the workshop: Assessing the outcomes of educational cooperation

• Implement systematic evaluation for greater transparency, comparability, and more informed decision-making.

• Use evaluation as an asset to speed up the implementation of new educational collaboration (e.g. quicker time to market for the design of new education curricula in universities).

• Implement assessment frameworks to evaluate innovative initiatives at EU and national level, in order to promote the sharing of best practice, linking existing initiatives and duplicating innovative ideas.

• Use assessment to promote dialogue and exchange between universities and business and improve the ways in which this cooperation takes place.

• Measure the outcomes of educational cooperation with a multi-criteria user-centred approach to cooperation.
Partnering for change

University-business cooperation involves two communities with marked differences in culture, values and missions. Bringing these organisations together can lead to institutional and behavioural change on both sides. There are a number of drivers for success at each phase in the relationship, including communication, understanding, trust and personal relationships.

This session, moderated by Professor Manfred Horvath (AT) Conference of Schools for Advanced Engineering Education (CESAER), gave examples of how universities and companies have changed as a consequence of partnerships providing an opportunity to reflect on the challenges and success criteria.

Professor Karen Maex (BE), Vice-Rector Science, Engineering and Technology, Katholieke Universiteit Leuven, described how KU Leuven has reorganised its activities along the education and research value chain following the 2012 reform of the Flemish higher education institution system that led to the integration of the professional educational programmes offered by university colleges into universities. This meant that KU Leuven had to integrate new programmes in its education portfolio. It prompted the development of three profiles for education, with a view to clarifying the University’s education offer for students and business. To complete the value chain, each of the three education profiles was extended into a single, all-encompassing research area. Though each education profile has its own faculty, research is divided into interdisciplinary departments that bring together staff and students from the different faculties. The process was led top-down and has enabled the university to broaden its innovation process.

Mr Jean-Luc Beylat (FR), President Alcatel-Lucent Bell Labs, Vice president of Pôle de compétitivité mondial Systematic Paris-Region, gave a presentation on how the interaction between firms, SMEs, research organisations and policy-makers is governed within a cluster organisation. The French national competitiveness cluster policy was launched in 2005 to boost innovation and economic competitiveness. Regional
for these developments. The university has recently joined the EIT and KIC InnoEnergy, which represent new opportunities for multinational flows of ideas, people and knowledge.

Mr Roland Sommer (AT), Director of Public Private Affairs, AVL, talked about how open innovation has profoundly changed the cooperation patterns of universities and companies, and subsequently influenced institutional structures and behaviour. At a time when research and innovation is becoming more and more complex, it is difficult for a company to deal with the complexity of a product on its own. AVL – world leaders in powertrain development, simulation and testing systems – have developed a comprehensive approach to university cooperation, with a balanced mix of long-lasting partnerships (e.g. shared facilities are increasingly important) and one-off investments in specific research projects, internships and placements. The challenges arising from cooperation are many and varied. Bringing together business and academia requires a lot of time and upfront investment to build trust and align partners’ expectations. This adds to the language and intercultural problems that can impede effective joint working, together with intellectual property rights-related issues, and differences in time frames and processes. Although the cooperation pattern has changed dramatically over the past few years, with the introduction of new cooperation instruments, policy barriers such as immigration law still impede the employment of global talent.
Comments/issues raised during the workshop

- **Can universities break out of their subject discipline silos to cooperate with business?** An increasing number of universities are adopting societal challenges that span their education and research activities and integrate multidisciplinary teams (including social sciences and humanities – SSH). These changes are motivated by a willingness to better brand their research and education offer. Some institutions have gone as far as introducing a one-stop-shop for all business needs to facilitate business interactions (e.g. Karlsruhe Institute of Technology).

- **Are changes only taking place in universities and how does the business working method change through closer collaboration with academia?** Cooperation patterns have changed and so have businesses, with a number of companies reducing in size and focusing on a co-creation process. Global businesses also adopt portfolio approaches to university-business cooperation driven by the complexity of the issues at stake.

- **What is the main driver behind change?** The main driver is neither business nor higher education, but is to be found in the changing nature of innovation itself. Companies have to share their knowledge with outsiders and competitors if they want to stay competitive. Universities are facing international competition for excellence in the knowledge market and are pressured by policy-makers to deliver socio-economic impact.

- **Respect is at least as important as change:** universities and business need to respect each other’s culture before looking to change one another’s culture.

- Another major question for the future is **how to involve customers and civil society?**

- **What is the impact of cluster structures on universities?** Universities benefit in a number of ways: the use of business facilities; opportunities for students to work on real applications; and the wider impact on their profile, branding and international reach. Socio-economic impact (e.g. job creation, knowledge transfer) is part of the targets included in the three-year framework agreements between French competitiveness clusters and the French government. Clear metrics have been defined to measure the impact on regional economy, with an increasing focus on added value.

Conclusions of the workshop: Partnering for change

- **Seek leverage of synergies and use of divergence in roles to foster innovation.**

- **Embrace the open innovation paradigm and open up to outsiders and competitors so as to strengthen the research, innovation and education value chain.**

- **Adopt the innovation eco-system as a model for collaboration (EIT, competitiveness clusters).**

- **Promote collaborative decision making in the context of the knowledge triangle (national business, universities research institutes, with support of local authorities).**

- **Profile the education and research offer more effectively and break out of the subject discipline silos in universities to gain in branding and international reach.**

- **Overcome the rigidities of old structures and cultural barriers to stimulate internal changes in structure and behaviour.**

- **Build up trust and respect, invest time upfront to develop a common understanding and align divergent expectations.**

- **Develop a comprehensive approach to cooperation, with a broad portfolio of partnerships (diversity in partners; variety of long-lasting partnerships and one-time needs).**
People and Innovation

*Design – a vital part of innovation*

This session explored design as a key driver of innovation, competitiveness and growth. The session also reflected on the skills needed and the paradigm shift represented by the incorporation of design as a general concept in higher education studies. This was followed by a set of examples and best practices on how design can be most effectively transferred to businesses. Mr Richard Tuffs (BE), Director of the European Regions Research and Innovation Network (ERRIN), moderated the session. He commented on how design is a key concept in both technical and non-technical aspects, which applies to both manufacturing and service industries. The landscape becomes even broader when innovation is added to the mix. The moderator noted that the University-Business Forum is ahead of the game by discussing this topic, in the same way that the Forum was ahead on the topic of smart specialisation in previous editions.

Dr. Caroline Hummels (NL), Professor of Design Theory of Intelligent Systems at the Department of Industrial Design (ID) at Eindhoven University, spoke of the lessons learnt in how design can support innovation. Design as a holistic activity can act as a driving force in addressing societal challenges. In rethinking the role of design, one can start a paradigm shift from a knowledge economy to a transformative economy. In this new paradigm, stakeholders work together on local solutions for local issues that stem from greater global challenges. The final goal is to try to become a sustainable society. To achieve this, commitment from the education system and private business to work together is needed, alongside reshaping of the educational system. This means moving towards self-directed and lifelong learning, based on a constructivist learning approach in which students become aware of their learning process and are affected by their socio-cultural environment. Dr Hummels also stressed the need to involve all stakeholders, academia, business and society at large, right at the beginning of any process. She also elaborated on two specific examples of design collaboration that can help foster disruptive innovation. The first is called the reflective transformative design process where decisions are taken based on little information but focus on a great awareness of the environment. The second is called the experiential design landscape, which takes the living lab approach between industry and university further by incorporating an experiential component.

Ms Danielle Salvadori (UK), Director of Enterprise and Innovation at Central Saint Martin’s College of Art & Design and Head of University Enterprise Development at the University of the Arts London, described the process of turning creativity into innovation, with a focus not on what they do, but on how they do it. Most of her department’s activities lie in collaborating with industry, bringing around €3.5 million per annum to the college. The key to that income is turning creativity into innovation by connecting staff and students with business and the community, facilitating the cross fertilisation of ideas through a multidisciplinary approach. Designers and artists share a need for confidence so as to have a creative identity. For this reason, it is useful to add designers and design skills to teams of scientists working together on innovative projects. Such a multidisciplinary approach not only helps to answer research questions, but it also reformulates how the questions are being generated. Governments love linear innovation because it is easy to measure. Although we have moved to more open innovation models that work well for the humanities, in reality what most people do is interpretive innovation (MIT, 2004).

Ms Salvadori presented the results from a 2008 study exploring the impact of 500 fine arts graduates on the economy. The study found that the graduates stayed in the creative industries but moved around within the sector, thus making a valuable contribution across the different disciplines. This was directly attributed to their education. Other findings included the lack of notion of retirement in these graduates coupled with a natural attitude towards lifelong learning. The graduates proved to be
much more locally connected but at the same time receptive to change. These findings reflect many of the key competences that are needed nowadays across all types of graduates. This transfer of key competences was achieved at the University of the Arts London, through the Master’s in Innovation Management. This course is directed by a philosopher bringing in educational approaches which incorporate observation, insight and the capacity to detect opportunities.

The academics at the university found that businesses collaborate with them for a number of reasons: brand association, inspiration, talent and product. These collaborations can be complex at the outset but as they mature they provide many mutual benefits. The collaborations with business at the University of the Arts London are more specific than some as they focus on business-to-consumer type relations.

Ms Isabel Roig (ES), Managing Director of the Barcelona Design Centre (BCD) and President of the Bureau of European Design Associations (BEDA) made a presentation on the role of BEDA in fostering the EU’s competitiveness in the private sector and the effectiveness of the public sector using design. Currently, the EU sees design as a driving force for competitiveness and innovation, but that was not always the case. BEDA has been putting design on the policy agenda for some years and is increasingly shifting its activities towards communication with companies and other stakeholders. The real value of design is still not recognised. In this sense there are still some unacceptable stereotypes, including the idea that during this crisis we cannot focus on design, but only on functionality, or that “design is what designers do” or again that “designers are hired for a one-off job and not embedded into business strategies”. Design is still usually seen as an add-on under the traditional technology push innovation model. Although an outdated paradigm, the policy environment in many countries still reflects this mentality.

Ms Roig stressed the need to embed a culture of design from primary through to the highest level of education which will encourage, enhance and facilitate multidisciplinarity. At BDC there were 400 ideas submitted, generating 50 creative start-ups and a revenue of €5 million in 3 years.

Professor Catherine Fehilly (UK), Associate Dean for Scholarship, Enterprise and Research in the Faculty of Arts and Creative Technologies at Staffordshire University, spoke about the issues, examples and rewards of involving businesses in design education. She stated that in the UK, the academics who frequently work with industry do not appear to be the same as those who work regularly with students, creating a virtual barrier inside institutions. Professor Fehilly presented three case studies bridging the gap between business and academia. Spots Atelier, where students produce their own designs for textiles for the fashion industry; High House, a line of heritage-inspired contemporary wallpapers, where students not only undertake the design but they also take it to market as a venture; and Flux ceramic tableware, already a spinoff company, an initiative of the Master of Arts Ceramic Design course. This is the only programme of its kind in the UK.

In the Staffordshire experience, they identified the main issues in each case with regard to staff (workloads, changing culture, anxieties about impact on students); students (workloads, time, anxieties about IP); partners (different cultures, need for mutual understanding, need to manage expectations); and technical resources (managing
conflicting needs of curriculum and commercial partners). The rewards were also identified with regard to staff (refreshing, invigorating, practising creative and entrepreneurial skills, not distanced from students); students (challenge, exciting opportunities, real industrial/entrepreneurial experiences, contacts, enhanced knowledge and skills, employability); and industry partners (access to fresh creative talent, market advantage from unique designs and a good commercial story).

Mr Carlos Azorín Soriano (ES), International Projects Coordinator of CETEM, presented design as a vital part of innovation, with a special focus on the furniture industry, CETEM’s main sector of activity. This technological centre in the Murcia Region of Spain, has experienced how a business association can act as a facilitator for interaction between universities and companies. With their activities they bridge the gap between industrial needs and higher education skills; involving students from very different backgrounds, from management, engineering and design, to work in internships with SMEs in the furniture sector in Spain. These businesses are particular in the sense that they do not have the resources for in-house design skills and are sometimes reluctant to embrace drastic changes in the way they work. Mr Soriano described another activity, where a furniture design contest serves as the calling card for students in design disciplines, helping them make contact with SMEs in their sector. Finally, he presented the ECOmovel and Ecoworking projects as examples of eco-design collaboration between CETEM and SMEs. Based on their experience, they can see three different economies in their sector; a creative economy, based on design; an eco-economy, based on sustainability; and a knowledge based economy, based on technological development and research. As a business association, CETEM undertakes activities aiming to create an overlap between these three spheres, aiding the interaction between people at different levels and in different stakeholder groups.

Comments/issues raised during the workshop

- On competition, especially with regard to illegal copies of designs (usually from emerging economies): Competition from traditionally low-income countries is changing; they look to Europe for a different type of knowledge and ways to educate their design staff. Education can be acquired cheaply by copying and reverse engineering. In some sectors, constant innovation is the status quo and imitations strengthen and support market development. Trust in collaboration is invaluable and increasingly necessary as innovations become more complex.

- All the cases discussed focused on the design of physical things rather than the role of digital and other types of design: Design thinking has already permeated disciplines like software development, wearables, smart sensors in textiles, and health-related applications. Design provides many cross sector solutions and its role can be further expanded to all sorts of business areas. This is an area which needs further development in the future.

- The narrowing of the gap between the skills needs of a good designer and a good engineer: There is a growing recognition of the need for all types of graduates to acquire a similar set of coherent skills which support creative thinking. The approaches taken to teaching and learning in design are often more successful in delivering these types of skills and graduates than the ones taken in technology and engineering courses. These newer approaches to teaching and learning foster ways of thinking which are vital for innovation.

- University-business collaboration in the field of design: Design has to face many of the same problems seen throughout universities and disciplines in relation to encouraging and fostering university-business collaboration. For example, lack of support for collaboration with SMEs and a need to understand each others motivations and mentalities.
Conclusions of the workshop: Design - a vital part of innovation

• Design is a key driver of innovation, competitiveness and growth. It can enhance the outcomes of numerous innovation activities but, at present, it is manifest primarily in technology-oriented and product-based developments.

• Design allows local solutions to be found for local issues which stem from greater global challenges. It should be understood as a holistic activity, rather than a last-minute add-on. When combined with technology and an awareness of the environment, design provides the groundwork that can make the paradigm shift from a knowledge-based to a transformation economy based on collaboration, locality and sustainability.

• As a result, design literacy is important for all graduates. To accomplish this the educational system should be reshaped, moving towards self-directed and lifelong learning with the students making sense of their own education through exploration and experimentation, rather than being fed knowledge.

• In addition, design education should be an integral part of business school, engineering and architecture training, and vice versa. This would address the current shortage of design skills and erase the remaining stereotypes regarding design.

• Experience shows that multistakeholder involvement, bringing together researchers and the general public, as well as academics and students, is critical for design activities.

• For institutions collaborating with private companies, it is difficult to package their design know-how into something they can sell. Bundling and transferring design, as a discipline to be adopted holistically by businesses, requires building trust through long-lasting collaborations and cross-disciplinary teams.
New profiles for new needs

This session explored the set of hard and soft skills needed by the existing workforce and new graduates for the new economy. The presentations and subsequent debate also explored questions such as how to generate and find these talents, and appropriate reward mechanisms. Mr Ben Butters (BE), EU Affairs Director of Eurochambres, moderated the session, introducing it as a new type of session in the University-Business Forum, with the objective to explore the possible match between the talent produced by HEIs and the skills needed by the economy. This concerns not only large business but also SMEs - which represent a major part of our economic backbone - and businesses that do not yet exist, or have to be created by the graduates themselves.

Ms Jitka Schmiedová (CZ), Vice-President of People & Property of Vodafone Czech Republic, made a presentation on the skills needed by new employees at Vodafone. Ms Schmiedová said that her work has revolved around the automotive, consulting and telecommunication industries, which share the same pressures on growth and margins, meaning that the skills needed in these sectors are similar. Nowadays, companies have to be more efficient in managing the complexities that built up during the «good times». In industries such as telecommunications, the product has suddenly become commoditised, so the main challenge is thinking about how to differentiate. All these changes mean that employers now require people to have new skills. Simplicity is the key word; they focus on people who can manage operations with simplicity and efficiency. Vodafone is looking for brave people who are willing to take risks but they are surprisingly difficult to find. People with a passion for customer care and customer support are also difficult to locate, and there is a current shortage of professionals with a deep understanding of different customer groups and segments. Vodafone hires annually around 8,000 people, 500-1,000 of them new graduates from top universities. For managers and specialist recruitment the company established the Discover programme, in which new employees are assigned to specific projects to accelerate their learning. Vodafone hire many young graduates as they learn fast, fit in well with senior people, bring a fresh approach and are very comfortable with technology. In addition, this approach fits their business case very well, as Vodafone has a very diverse customer base and young customers represent a very strong segment.

Professor Giovanni Azzone (IT), Rector of Politecnico di Milano, commented on how it is now easier than in the past to have a shared approach with businesses with regard to skills. Globalisation is affecting universities as well as companies. The Politecnico di Milano was previously the de facto choice for a student from the north of Italy who wanted to do an engineering degree, but now the number of students studying abroad has doubled and the university has had to adapt. Professor Azzone also commented on how SMEs are thinking about human capital, just like big businesses with a need to look for talent external to their local and national markets if they are to continue to compete. The university is well placed to act as an intermediary in giving access to a wider pool of international talent for SMEs.
The profiles of the talent need a mixture of skills including strong technical competence in one field but with the ability to understand other disciplines and culture (T shaped people) and ability to work across the global supply chain. For positions at a higher level, social responsibility - the ability to understand what your decisions mean for other people from a social point of view - also becomes an important skill. Several approaches have been tried at Politecnico di Milano to foster these kinds of profiles. Double degrees and Erasmus programmes are not used widely because they exclude people that are not from wealthy families. There are now planning tools for students to be able to choose more subjects within their degrees, focusing on workshops with people from different backgrounds solving real industrial problems presented by real businesses and social activities, like cooperation in developing countries.

Mr Mikkel Trym (DK), Director of the Copenhagen Innovation and Entrepreneurship Lab (CIEL), gave a presentation on how the centre fosters new skills within graduates. CIEL is a joint innovation centre of the three major universities in Copenhagen created at the request of industry partners. Their collaborative model with industry is based on how to bring students into the triple helix approach. They have found that students are the missing piece in forming collaborative partnerships, as they can act faster than traditional researcher-industry collaboration and both sides benefit from the relationship. The centre runs the Thematic Entrepreneurship Excellence Program (EEP), similar to mini-KICs in their approach. In the EEPs, students work on the societal challenges of local companies through a long-term partnership with the centre. This means that doctorates can be developed within the programme while it also serves as a platform to build trust. So far three such programmes have been initiated, one on sustainable cities, another on digital services in health and the last one called “food for thought”. In addition, the centre gets students involved in technology transfer activities, working on IPR in direct contact with industry. The centre also nurtures the ecosystem of student entrepreneurship, mapping all the support available to entrepreneurs launching and growing their own company.

Mr Andreas Tegge (BE), Vice-President of Government Relations at SAP, presented SAP’s activities to address the ICT skills gap in Europe. Like any software company, SAP’s main asset is its workforce and the company’s ability to work and to compete is entirely based on its people. SAP continues to grow and is still hiring people in Europe and not only in the developing countries where most of the growth tends to take place. Increasingly there is demand for a new skill set, requiring people with dual qualifications, with a deep understanding of a specific industry but who can convert that expertise to other business areas. One current trend is big data: everybody is producing it, and customers are concerned as to how they can create the most value from it. It is difficult to find people that can meet this kind of demand in Europe. SAP has a competitive advantage over its SME partners as it has a strong brand and is an attractive work place.

The EC’s estimations of the increasing lack of ICT practitioners in Europe exposes a structural problem in Europe which SAP cannot solve on its own. SAP is developing a set of training solutions to do their part and their commercial training platform reaches 300,000 people annually, making it the global leader for ICT training. In addition, they are starting non-commercial training initiatives to address the skill shortage. One of them is the EU Academy Cube, which was launched in 2013 and attempts to address graduate unemployment by providing them with the right ICT skills. The first pilot test has shown that 75 per cent of those trained with the tool have found a job within six months. They now want to scale up to tool to reach and employ 200,000 people within the next two years. The platform will be open to content from other content providers from academia and industry. All the stakeholders are invited to join as partners to benefit from the platform. Another action of SAP is the University Alliances Programme, which
provides HEIs with access to their tools, training material, technical infrastructure and input into the curricula. After 10 years of this programme, they have found a balanced way of working with HEIs which reduces reluctance and defensiveness, and helps incorporate their approaches into curriculum development. These best practices are shared with HEIs using an online platform.

Comments/issues raised during the workshop

• **What is the role of third parties in facilitating these collaborations between SMEs and HEIs (Chambers of commerce, clusters, business associations, etc.):** As SMEs are increasingly looking to the international market for skills and competence development, there is a need to ensure they receive the right type of advice and access to talent. This gives a new role to third party intermediaries who also have a responsibility to understand and support this development.

• **Whether we still need very technically focused people or just T-shaped people:** The university strategy needs a dual approach to ensure both types of graduates are educated. There is no replacement for a strong technical competence but at the same time expertise alone does not work anymore; new employees have to have the right attitude, and cultural flexibility is important too.

• **How to reward these multi-talented people that businesses are looking for:** Compensation has to be combined with an intrinsic motivation to do the job. The way to maintain motivation is multi-faceted. The rewards can be summed up as: compensation, empowerment and life work balance.

• **How can the world of research and the world of business interact better? Do we need business people in academia and vice-versa to help address the skills gaps?** There needs to be a shift from “transfer” to “cooperation” between business, research and the HE worlds. New approaches to connecting with universities are emerging, with business practice being incorporated into HEIs, for example focus groups are often held with customers and are also a very useful approach to link university with business. Additionally businesses can bring researchers and professors inside to experience new ways of working and understand current needs. Recent graduates working in industry can also give further feedback to professors on what they felt was missing from the curriculum. It is critical to have a feedback mechanism between business and education; one way of doing this is through key performance indicators, a common currency in business.

• **How are soft skills recognised during the recruitment process?** The recruitment process should focus on identifying people with the potential to develop soft skills rather than identifying the skills themselves. These are however very difficult to assess during an interview, a short encounter between a potential employee and employer. Internships are a good mechanism for assessing soft skills in an individual as they develop a relationship between the two players. When hiring somebody you have not met before, intuition and exercises prepared by external experts can help.
Conclusions of the workshop: New profiles for new needs

- During these tougher times, companies have to be more efficient and nimble, as well as better able to manage complexity and to keep competing and differentiating. This sets new skills requirements for the existing workforce and in new graduates.
- To be successful in a very competitive market, new graduates need a strong technical competence in a given field as well as the ability to understand other disciplines and how they interrelate (T-shaped people).
- As for soft skills, companies demand new graduates with a fresh approach that emphasises simplicity, as well as the ability to work across cross-cultural barriers. The need for a sense of social responsibility is also something that is much valued, especially for higher-level positions.
- Hiring excellent workers cannot be done in a traditional manner; it requires a different approach that focuses on generating a relationship with the company and the candidate to see if there is the appropriate fit (through internships, for example). Holding on to these talents needs, besides adequate compensation, empowerment, and an appropriate life-work balance.

Spotlight on Knowledge Alliances and Massive Online Open CourseWare (MOOCs)

**Partnerships in Action – Knowledge Alliances**

Established in 2011, the Knowledge Alliances (KAs) are designed to bridge the gap between higher education and business. These structured partnerships bring together higher education and business to collaborate on common projects tackling common challenges. The strength of this approach is the quality and commitment of the partnership, the value of true knowledge exchange, and the trust this generates between the two sectors for mutually beneficial and innovative outcomes. These projects can cover any given sector and topic.

In this session, representatives - from academia and business - from the first three pilot projects, discussed how they developed innovative approaches to education, learning, entrepreneurship and knowledge exchange and what challenges and outcomes have resulted from their collaboration. The project presentations also benefited from video testimonials from students who explained why they participated in the projects, what they liked in particular and found exciting or challenging, and what were the main benefits and knowledge they gained through their involvement.

**Mr Jacek Guliński (PL)**, Deputy Minister of Science and Higher Education moderated the session on the Knowledge Alliances. Mr Guliński emphasised the importance of academic and business relations and invited the workshop participants to join further discussions in Warsaw where a thematic University-Business Forum will be held at the end of November 2013.

The session began with a presentation from **Mr Gideon Maas (UK)**, Director of the Institute of Applied Entrepreneurship, Coventry University and **Mr Richard Kirkwood (UK)**, Chief Technology Officer, Hewlett Packard who described their experience of the implementation of the European University Enterprise Network (EUEN) KA project. EUEN finishes at the end of July 2013 after an 18 month period. The project built on a partnership between business, academia and students in delivering leadership training that promotes entrepreneurial culture at the university. The project contributes to the development of different faculties – predominantly those who have not been involved in similar activities before - to behave in a more enterprising manner, and increase student employability. From a business perspective Mr Kirkwood highlighted the importance of recruiting
graduates who have good employability skills. The EUEN project is about changing the ways people think and improving entrepreneurial attitudes. The main outcome of the project is the creation of an electronic book containing a set of cases they learnt during their journey, including reflections on the partners’ experiences and key achievements.

The project partners pointed out several issues they encountered during the project implementation, which might serve as good lessons for the other KAs to follow. First there was a need to explore new ways of effective communication amongst the partners which involved seven universities and seven business partners at different locations in Europe. Furthermore, the project partners had to overcome budgetary constraints. Then, lessons learnt had to be shared to accelerate the entrepreneurship learning curve due to a lack of understanding of the concept at the start of the project. Finally they needed to acknowledge that there is no one-solution-fits-all due to differences in the partners’ levels of development.

The project partners intend to continue to collaborate after the close of the project in July 2013, and they are in the process of creating an action plan to take the operation to the next level. Two institutions have already committed financial support to continue the project activities.

The project entitled ‘A Knowledge Partnership for the definition and launch of the European Teaching Factory Paradigm in manufacturing education’ (KNOWFACT) was introduced by Mr Dimitris Mavrikios (GR), Project Manager, University of Patras and by Mr Lennart Malmšköld (SE), Manager, Volvo Group Trucks Technology and Project Planning. The project addressed the problem that manufacturing cannot be taught efficiently in classrooms, and research results developed by educational institutes are not always directly available for industry. Also, it is very difficult to maintain up-to-date curricula detached from industry and the economy. This new approach incorporates all the sides of the knowledge triangle. The main goals are to increase student comprehension, to develop and implement the teaching factory concept and to identify the potential for further improvement. The project partners brought the factory to the classroom, and the research laboratory to the factory using advanced communication technologies to overcome physical distance.

The project combined the expertise and knowledge of all stakeholders. Students became knowledge recipients when engineers presented real cases to them during different sessions. Students then contributed to these existing projects by trying to find innovative solutions for real industrial problems. The results of the students’ work provided the engineers with potential solutions and ideas while the academics benefited from using the cases as test-beds for their research results. Such sessions can be held either in one classroom or these can be delivered in many different locations at the same time using advanced communication techniques such as ‘augmented reality’, which enables real time interaction between the engineers and students.

Experience from the project shows that students found participation in these activities rather demanding and challenging, due to the mixture of laboratory work, classroom work and communication in a foreign language. The real problems and the new experiences motivated them, made them respect deadlines and contributed to deepening their knowledge.

The third project ‘Cinema and Industry Alliance for Knowledge and Learning’ (CIAKL) focused on the film industry. Professor José Damásio (PT), Universidade Lusófona and Mr Nuno Gonçalves (PT), Board Member, ZON, gave an account of their experience from the CIAKL project. The project was developed along three main activity areas: a) Learning technologies – that promoted joint development of curricula, courses and materials; b) Collaboration that fostered the creation of shared knowledge spaces between academia and business as well as with other stakeholders in the target industries; and c) Mobility through networking, joint infrastructure and applications for training.
Comments/issues raised during the workshop

- **Successful implementation of projects with multiple stakeholder involvement requires a well-functioning ecosystem to be in place**, that can provide support for the different activities undertaken. For example at Coventry University the eco-system includes a student enterprise fund managed by an external expert, and access to business angels and to the university’s premises and facilities.

- **The use of advanced communication techniques** also makes a significant contribution to the success of project implementation. This requires the appropriate IT system, and the training of trainers in the use of the new communication tools.

- In answer to a question regarding the type of **difficulties experienced** by the project partners, representatives of all three projects mentioned that the timeframe of 18 months for the design and implementation of the project had been too short.

- Workshop participants also enquired about the number of **students involved in the different project activities**. Due to the differing nature of the projects, the answers varied considerably. While EUEN targeted in total 1,200 students - 200 students per participating institution - KNOWFACT focused on small groups and engaged a total of 40 students across their three pilot projects. CIAKL ran nine pilot projects, engaging about 100 students directly, with a further 150 students linked to the production of the pilot projects.

- In response to a question whether the projects delivered value to all stakeholders, the business partners answered first, emphasising that the **immediate benefits include short-term value delivered to the participants**, e.g. to the engineers in the KNOWFACT project in the form of new ideas and solutions. However the real benefits will emerge in the long-term. It is essential to make industry more interesting to students, to cope with the need for more engineers, and to secure good supply of graduates equipped with the right skill set and an understanding of the world of work.

- **Benefits delivered to the academic partners** included improved curricula and teaching activities through the input gained from industrial contacts, collaboration and knowledge transfer activities. Furthermore, staff can be given incentives to participate such as, for example, rewarding such activities in the annual staff evaluation or by providing financial incentives and the opportunity to generate additional income.
Conclusions of the workshop: Knowledge Alliances

- Knowledge Alliances are structured partnership bringing together business, HEIs and students with the main objective to increase student employability and entrepreneurial mindset through cooperative curriculum development and delivery.

- There are many benefits delivered through these partnerships as highlighted by the project partners of the three pilot projects. However, the pilot projects also showed that involving project partners represents a major challenge, as it is essential to find the right motivation and solution and to overcome problems of physical separation.

- To establish well-functioning partnerships that deliver benefits to all involved, it is also crucial to understand and define the stakeholder value:
  - For businesses, involvement can result in new perspectives and innovation; offering possibilities to find future employees and academic partners.
  - Students have the opportunity to deepen their theoretical knowledge while tackling practical problems; to develop their problem-solving skills and, as an end result, gain confidence and increase their employability.
  - Benefits for academics concern the possibility to create more dynamic and engaging curricula which help deliver a better understanding to students, the possibility to interact with ‘colleagues’ in industry and potential future partners for collaboration.

- However, there are also barriers to overcome to accomplish successful implementation. The main issues experienced by the three pilot projects were in designing and delivering the curriculum:
  - It is a challenging task to find the right sort of problems for students to solve.
  - Cross-cultural differences and variation in the partners’ levels of development have to be born in mind when developing the content of the projects.
  - Timing plays a vital role both in terms of the short timeframes for project implementation and creating a good fit within a curriculum.
  - A common understanding of the concepts involved needs to be developed at local, national and European levels.
Massive Open Online Courses (MOOC) – Challenges and opportunities

Over the last decade there has been a growing trend to make learning materials more freely available under the title of open educational resources (OER). In 2001, the Massachusetts Institute of Technology (MIT) in the US started making some of its courseware available to the public. Since then, hundreds of universities have made courseware available online and are part of the OpenCourseWare Consortium a worldwide community of higher education institutions and associated organisations committed to advancing OpenCourseWare and its impact on global education.

One part of the Open Education movement is MOOCs, Massive Online Open Courses. These are free courses without enrolment restrictions, delivered over the web to large numbers of students at the same time. As courses they include interaction, feedback and, potentially, assessment, rather than just access to coursework. MOOCs have received a lot of attention and are the subject of interest and discussion by a growing number of higher education institutions across the globe. However, the development of MOOCs is a multi-faceted issue that calls for analysis from multiple perspectives including users, platforms, companies and HEIs.

The session was moderated by Mr Michael Gaebel (BE), Head of the Higher Education Policy Unit, European University Association (EUA), who welcomed the panel assembled to discuss the challenges and opportunities presented by the MOOCs. He launched the session by asking: Is there a business case for MOOCs? While we know what MOOCs are, we are not clear about what they do apart from offering free online education to a lot of learners.

Professor Karl Aberer (CH), Vice-President for Information Systems at the Ecole Polytechnique Fédérale de Lausanne (EPFL), gave an overview of EPFL’s involvement in MOOCs. EPFL was one of the first universities to run MOOCs in Europe, with a motivation to achieve a high level of global visibility to attract students. These courses contribute to improving and diversifying teaching and are foreseen to have a major impact on the university landscape. There are large numbers of students participating in the courses, which provide a variety of opportunities for learning. In the long term MOOCs can contribute to widening the mission of the university, building networks and help outreach to developing countries.

The data available on the participants provide valuable insights into the profile of the people taking part. The majority of students have already completed Bachelor or Master’s level studies and come predominantly from the Americas, Europe and Asia, with additional participation in the French courses from Africa.

Professor Aberer pointed out that while there is less need for big classrooms and ex-cathedra teaching to deliver these courses, due to the increased levels of face-to-face interaction and small group work the amount of effort really needed is still unclear. In terms of social impact delivered, MOOCs will make knowledge accessible to disadvantaged people, and will bring competition in the knowledge-generating market to a global level. However, the system has some risks associated with it such as a two class education system (MOOCs vs campus).

Mr Felix C. Seyfarth (DE), Curator and Docent of the MOOC «Think Tank Cities», Leuphana University provided the perspective of a small German university, which had been traditionally involved
in distance learning activities. When the MOOCs appeared, they decided to experiment with the new courses. Their courses were highly successful with a large number of students enrolling, leading to the establishment of a new school to support MOOC implementation.

There is continued widening participation in the courses, and the university now gives credit for participation in the MOOCs. The courses developed use innovative solutions and allow interaction between the participants: students have the opportunity to look at each other’s work and assignments, there is also a discussion forum. The working platform includes a library, with videos available through YouTube. Though the methods applied represent highly innovative teaching, this type of delivery is a rather expensive undertaking, as it requires the creation of a platform, digitalisation and the running costs of all operations and upgrades.

Professor Daphne Koller (US), Stanford University, Co-founder Coursera, joined the Forum via video link. Professor Koller explained that when they started MOOCs at Stanford they expected about 3,000 people to enrol, and had 100,000 registrations. Coursera is now offered through 80 university partners worldwide, involving 3.6 million students. Partner universities include 30 of the top 60 universities in the world covering Europe, Asia and Latin America. Courses are run in six languages and cover a range of disciplines, as well as the original computer science course. Courses are now available in fields as diverse as philosophy, history, art, and business.

The courses deliver many benefits for the student, as MOOCs create the possibility to work together across borders and physical boundaries. Students can interact and discuss issues in much greater detail and even create their own communities around the world.

Mr Sotiris Makrygiannis (FI), CEO of Eliademy previously worked in the mobile telephone industry and talked about the fast pace of change and development in the communications industry. Machines will increase in intelligence so that by 2025 a mobile phone will have the same processing power as a human brain. By 2050 a mobile phone will have the processing power of the entire human race … that is 8 billion brains.

The market for MOOCs is significantly increasing and it provides a very good business opportunity. A catalogue of available courses will be released in September 2013, with courses available in 13 languages with a significant increase anticipated in the offer in the future, both in terms of content and language coverage. Mr Makrygiannis urged Europe to embrace openness and transparency and be cooperative with open sources in order to become a leader in the development of standards, especially in adaptive learning. Furthermore, he called for massive retraining for all, updating the curriculum, finding ways for education to inspire and stimulate technology, while protecting and maintaining European cultural diversity.

Professor Stephanie Fahey (AU), Lead Partner, Education Oceania at Ernst & Young explained that in Australia they need to find new ways to fund universities and this means re-evaluating propositions. When making decisions one has to bear in mind the need for skills training, as people need to be trained for jobs which did not even exist ten years ago. In her presentation, Professor Fahey explored the demand side of MOOCs and raised a few fundamental questions that need to be answered in the near future. Industrial recognition of MOOCs is a critical success factor which is lacking. This issue of recognition raises the question of whether such courses will be able to replace existing degrees? Who actually sets the standards and the credentials? MOOCs offer many opportunities and more flexibility. In a MOOC one can see how students learn, not just the end result. This aspect of the MOOCs raises the question of the ownership of this information and data. MOOCs assume high levels of digital literacy and good Internet connections, but for some students, from developing countries for example, it may be a real challenge just to have enough bandwidth or reliable sources of electricity to maintain a connection.
In the final presentation of the session Mr Simon Nelson (UK), CEO of FutureLearn spoke about the fast pace of change and the new ways of teaching and learning that the MOOCs introduce. There are many opportunities in MOOCs and in the use of the Internet which contribute to transforming HE by significantly broadening access to, and the convenience of, higher education. To develop FutureLearn in the UK, experts are working with a team that combines expertise from different fields and also benefits from the experience of the Open University, which has pioneered informal learning methods and provided world renowned services in distance learning for over four decades. FutureLearn aims at building a new platform for online learning, not only for MOOCs. In terms of content, there are currently 20 partners developing courses, including universities. There are also cultural partners who can provide access to their digital archives for FutureLearn. The first courses will be launched in late 2013.

Comments/issues raised during the workshop

- **What is the impact on resources?** There appear to be three cost drivers: the platform, the development of the material and the operations. The platform and the material are known costs (to a degree) whereas the operations can be more difficult to predict. Some of the cases used as examples have not yet seen a return on investment but these are still early days in the development of the MOOCs.

- **What are the practical challenges in the short term?** Who sets the standards and the credentials of MOOCs? One of the advantages seen in the US is the branding of the MOOCs associated with their top universities, which use the brand to attract students.

- **Are the MOOCs something which will create another divide (digital literacy) or will they reduce division and increase access to all?** Many of the speakers pointed out the importance of MOOCs in allowing access to courses across the globe and for all parts of society. There is also good evidence that this is happening. However, there are still issues of bandwidth in Africa for example and also large sections of the global population who will not have access to computers or the skills needed to fully engage with the courses on offer.
Conclusions of the workshop: MOOCs

- MOOCs are a means of supplying “Free delivery of higher-education courses online without enrolment restriction”.
- The conditions for creating MOOCs include a onetime investment in platforms but a longer term investment in courses and assessment.
- There has been a significant increase in interest and focus on open online courses over the last 2 years, despite the fact that online learning has been around for over 15 years. The US has been leading the MOOC movement but there is now a growing MOOC development and delivery in Europe.
- There is a large global audience for MOOCs, with 70 per cent of it being outside of the US.
- Those people taking up the MOOC offer have generally already completed undergraduate and Master’s degrees and there are a growing number of professionals. They could potentially increase access to higher education across all social groups.
- MOOCs represent a shift in education delivery mechanisms and change the ways in which students learn, both technically and in terms of content. MOOCs constitute a blurring of boundaries between the educator and the learner with the learner having a more significant role in the curriculum development and delivery.
- There are many benefits to MOOCs in terms of lifelong learning opportunities, access to all, increasing competition (and, therefore, in many cases quality), plugging skills gaps and also increasing the understanding of how people learn.
- MOOCs create value for many types of stakeholders:
  - For HEIs this includes building a brand, digital footprint, broader social mission, online innovation, attracting more students and commercial experimentation.
  - For businesses this includes getting better skilled graduates, more relevant and specialised content, access to information on potential employees.
  - For students this includes better access to education, a global perspective, flexible learning opportunities, dynamic content, and direct feedback (from educators and peers).
  - MOOCs also come with a number of challenges as they are an example of how the Internet has come to Higher Education and so will create disruption in the sector. The higher education institutions will need to rethink their role in the higher education landscape and will have to work harder to maintain their brand and customers. Overall quality should always prevail no matter what the delivery mechanism.
- MOOCs give rise to a number of questions such as:
  - How does the local education offer interact with MOOCs? Will MOOCs replace a degree or supplement it?
  - What is the overall business model to be applied?
  - What happens with the student data and who owns them? Who owns the content and the platform?
  - How do MOOCs affect the assessment of talent? A key driver for MOOCs success will be industry recognition. How will employees (future/existing) become accredited in the future?
  - Do we really want to leave the primary role of teaching of students in the hands of so-called US ‘elite universities’ potentially at the expense of the locally-active universities?
Keynote address and round table discussions

Plenary Session: Feedback, conclusions, main messages from the Parallel sessions

The second day of the Forum began with a welcome from the Moderator Mr Jordi Curell (BE), Director, DG Education and Culture.

The four Rapporteurs gave a summary of the conclusions drawn from the Parallel Sessions. The Rapporteurs were:

- Workshop 1: Professor Marek Kwik (PL), Director of the Centre for Public Policy Studies, University of Poznan
- Workshop 2: Mr Keith Herrmann (UK), Director Higher Ed Research
- Workshop 3: Mr Ludovico Monforte (IT), Lombardy Chamber of Commerce
- Workshop 4: Mr Todd Davey (DE), Manager International Projects, Fachhochschule Münster

The Rapporteurs’ presentations were followed by a moderated discussion, covering questions of how civil society can engage with higher education and business and what are the societal benefits of university-business cooperation.

The Moderator, Mr Curell concluded on the changes in the ways research, innovation and education are delivered, with an increasing focus on international, interdisciplinary and intersectoral activities. Cooperation between university and business is central. Cooperation is not just about delivering new kinds of training as higher education institutions have to shift from being just learning and teaching places to meeting places.

Keynote address – Looking ahead

The first keynote speech was delivered by Mr Ferdinando Becalli-Falco (IT), President and CEO of GE Europe, who presented the perspective of a global company on the role of university-business cooperation in addressing the economic issues currently faced by Europe. At a time when Europe is experiencing one of its most severe crises, public-private partnerships have become essential to prepare for the next technology-driven growth spurt. The innovation that is needed today in Europe is not one that can be moved forward by one company, university or government alone. If universities have improved, there is still a huge gap compared to what could be done to fully embrace their new roles. This is exemplified by the increasing skills gap, despite the growing unemployment rate in European countries. Europe is creative and has strong technology capabilities. To drive future growth, the innovation process should be accelerated, with the support of the European Union and the Member States. Companies and universities need to further capitalise on their efforts.

The second keynote speech was delivered by Prof. ir. Karel Ch.A.M. Luyben (NL), Rector Magnificus, Delft University of Technology, President elect of the Conference of European Schools for Advanced Engineering Education and Research (CESAER). He gave the perspective of an engineering university, explaining how the Delft University of Technology (TU Delft) addresses its three core missions, education, research and valorisation. The speaker emphasised the diversity in research approach and the need to profile universities and industry recognising this diversity. There is not necessarily a straight path from a fundamental/pragmatic research approach to the curiosity/usefulness driven research and one should also bear in mind differences in time frames. TU Delft has developed a full range of industry-university cooperation that spans bilateral and in-consortia research, to entrepreneurship courses, tailored in-company programmes and MOOCs. This cooperation is not about business, rather about spreading an entrepreneurial mindset.
among students. The university has recently opened a new building named the Delft:Dream Hall (D:Dream Hall), where teams of students work on innovative projects such as solar powered vehicles. The drivers behind business cooperation are educating individuals and training the future workforce; liaison with business and society; expansion of the university's activities; and the development of technology in a different way. Trust, willingness and respect are key success factors in any partnership. National and European public support programmes are fundamental to building long-term partnerships and stimulating the right framework conditions, with the examples of the Dutch public-private partnerships that build on associations of universities of technology, technological institutes and industry to develop pre-competitive research.

**Round table**

The round table session was moderated by Mr Richard Hudson (BE), Managing Director, ScienceBusiness. In his introductory speech, Mr Hudson pointed out the importance of long-term strategic relationships in making a difference in university-business cooperation. Mr Nigel Carrington (UK), Vice-Chancellor, University of the Arts London (UAL) said that university-business cooperation does not exclusively concern engineering and technology studies. He spoke about how to develop good relationships in the creative sector, a very focused but fast-growing sector. Because of the small constituency of businesses they can work with, UAL has developed creative ways to engage with business. Their approach is based on a small group of people who have worked with business and can help academic staff understand business culture and share a common vocabulary, a key factor for successful collaboration. The university started small, with students working on business projects for companies. One should bear in mind that even a small amount of money can fund important university-business initiatives. UAL has broadened the range of its collaboration activities, including consultancy services and short courses, incubating units with staff and students and the development of an innovation insight hub.

Ms Jana Kolar (SI), founder of Morana RTD, EIT Governing Board Member, presented the tailored approach that her company has developed to university-business cooperation, differentiating between universities in their role as research and development partners and as suppliers of a skilled workforce. She emphasised the importance of locality, as regional universities best know regional needs, networks and administrative procedures. Companies located in a region would address regional universities first with their enquiries. Ms Kolar also raised the question as to whether Europe should invest only in excellence in higher education, or across the whole spectrum. The higher education sector represents an extremely important factor in the socio-economic development of new EU Member States, which still lag behind. There is a variety of public instruments contributing to building up trust between universities and business, including the European Structural Funds and the EIT. However, there is still much to be done, especially in the field of education cooperation. Universities usually do not develop their curricula in partnership with the socio-economic sector. Changes in mindset are crucial, with more mobility, benchmarking, and the development of international accreditation for university curricula.

Mr Bruno Lanvin (FR), Executive Director, Initiative for European Competitiveness, INSEAD, presented a demand-driven approach to curriculum development. INSEAD Business School reshapes its curriculum every year based on business needs, in order to reflect changes in the job market. Even though future job profiles may not be predictable, higher education institutions can still define and focus on the core skills that graduates need in order to succeed. INSEAD has defined a three-dimensional set of skills focused on entrepreneurship, innovation and leadership. These skills are intended to allow graduates to change profiles and adapt to different environ-
ment and areas. Mr Lanvin concluded with: “Just like Columbus we cross the ocean with three ships: entrepreneurship, innovationship and leadership. But we do not know yet where we will arrive in 2020.”

Closing remarks

In his closing speech, Mr Dainius Pavalkis (LT), Minister for Education and Science, Lithuania, (EU presidency, July - December 2013) reaffirmed the need to balance excellence and development support. The first message to bring to the Council of the EU is that collaboration between universities and business is essential and stronger cooperation is needed. Global business is awaiting a strong portfolio of collaborative universities in new technologies. Universities have to adapt to global, changing market needs, by aligning their research and education value chain. This includes aligning with the demand for new job profiles, and a more entrepreneurial definition of learning outcomes. The Lithuanian Presidency will be an opportunity to discuss future trends in higher education. The challenges and new opportunities offered by the MOOCs, open education resources and digital learning need to be reviewed, to assess whether they make higher education institutions more accessible, or further increase the differences between institutions. Due to these future challenges, university and business are becoming inseparable partners, and creativity is a core element in their relationship.

Mr Xavier Prats Monné (BE), Deputy Director General, DG Education and Culture, emphasised the high number of positive outcomes of university-business cooperation showcased at the 2013 University-Business Forum. These outcomes demonstrate the merits of European investment in this area. The fifth edition of the Forum has been, once again, an opportunity to discuss many interesting and original ideas which should now be translated into practice. Past editions of the University-Business Forum instigated and supported a number of policy developments including the launch of the Knowledge Alliances and the cooperation between the EC and the OECD for a Guiding Framework for Entrepreneurial Universities launched in October 2013. As a result of the work, there is now a broader understanding of how university-business cooperation works in practice. A key challenge for the future is to ensure

Comments/issues raised during the discussion

• What makes a good relationship? A successful university-business partnership requires complementarities between the partners, and the most suitable partner is not always the best in class. Businesses are glocal, in that they have a global reach but are also deeply rooted within their regional environment. They value regional universities as much as the top, world class universities.

• What is the impact on the employment of graduates? Diversity is globally recognised as a key factor for innovation, with a strong demand for cross-border graduates.

• Is the difference between the Anglo-Saxon and the European understanding of entrepreneurship a myth or a reality? One example is the difference in attitude to failure between Europe and the USA and, to a lesser extent, the UK.

• How to ensure the integrity of a university system? Governance and rules should guarantee that researchers do not become too closely involved in business interests.

• What is the most important thing that policy-makers can do to foster university-business cooperation? Identify the main problems and develop public-private partnerships, seed funding for innovative initiatives, benchmarking and exchange of good practice. Another issue to be addressed is the lack of flexibility in the labour market that can impede labour mobility.
that cooperation builds on the full spectrum of innovation; not just research, but also education. The University-Business Forum will continue to be a bottom-up initiative to channel the needs of users and entrepreneurs. In terms of structure, a balance will be ensured between continuity and structured cooperation, with new ideas and emerging topics to be incorporated, such as the MOOCs. The EC’s commitment is shown in the 40 per cent increase in the budget of the future 2014-2020 educational programme, currently under approval, compared with the previous programme. The new programme will give more emphasis to generating systematic impact and will focus on strategic alliances and seed money to scale up innovative ideas.

Mr Xavier Prats Monné concluded by thanking the participants and organisers of the conference and reaffirming the European Commission’s commitment to transforming ideas into action.

CONFERENCE END
Appendix A : List of Acronyms

AIT-Budapest – Aquincum Institute of Technology
AGH-UST - AGH University of Science and Technology
CEO – Chief executive officer
CESAER - Conference of European Schools for Advanced Engineering Education and Research
DG – Directorate General
EAC – Education and culture
EC – European Commission
EIT – European Institute of Innovation and Technology
ERDF – European Region Development Fund
ESA – European Space Agency
EU – European Union
EUA - European University Association
FP – Framework Programme
GE – General Electric
HE – Higher education
HEI – Higher education institutions
HR – Human Resources
ICT – Information and communication technologies
INSEAD - European Institute of Business Administration
IPR – Intellectual property rights
KIC – Knowledge and Innovation Communities
KPI – Key performance indicator(s)
KU Leuven - Katholieke Universiteit Leuven
LLL – Lifelong learning
MOOC – Massive Open Online Course
NGO – Non-governmental organisation
PPP – Public-private partnerships
OECD – Organisation for Economic Cooperation and Development
R&D – Research and Development
SME – Small and medium sized enterprises
SSH – Social sciences and humanities
TU Delft - Delft University of Technology
UAL – University of the Arts London
UBC – University-business cooperation
UBF – University-Business Forum
UL – University of Limerick
VET – Vocational education and training