Good Practice Report

North West Romania

Good practices in promoting interactions between enterprises, universities and research institutes.

A report to ADR Nord-Vest
University-Enterprise Sub-Committee

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A. Introduction

Promoting stronger cooperation between businesses and universities is now widely recognised as a necessary condition for strengthening innovation performance within an economy. Not only can this boost the outcomes of research undertaken within a university, it can also assist higher levels of productivity in business and increase their profitability to assist economic growth. Significantly, the economic benefits of university-enterprise cooperation need not be found solely in the field of research activities, cooperation in the field of education can also provide positive returns.

Over the past decades much has been learnt about the mechanisms through which beneficial and productive cooperation and interaction can be promoted. We have moved from a simplistic linear model of science push to recognise the value of the social process in delivering desired outcomes. In this model it is often the process that is crucial, rather than investments in technology, buildings or even particular sectors. Whilst innovation infrastructure is a necessary condition, it is in no way sufficient on its own.

The purpose of this paper is to draw from the myriad of examples which are available to illustrate approaches which might be considered in seeking to address identified needs. These needs were agreed in the initial workshop of the University-Enterprise Sub-committee. There are many examples of how to do things well (and how not to do things) and so this paper does not claim to identify the 'best' nor seek to be exhaustive, merely to provide pointers for approaches that might be adopted in North West Romania. It introduces ideas for potential action and future projects, which can be adapted and developed in ways that suit the particular context of North West Romania.

The best projects will tend to serve multiple goals, as it is these which best meet the needs of different stakeholders and parties. However, it is crucial that projects should not seek to be too broad, as they then run the risk of satisfying no one. The initial workshop of the University-Enterprise Sub-committee identified six key needs, with the first two regarded as the most significant:

- Mechanisms for technology transfer between universities and businesses
    - Research centres outside of universities founded on excellence
- Improve communication within Universities and between enterprise and academia
- Smart Transportation (infrastructures) plus improving quality of life (education, health, bureaucracy)

- Attract skilled staff to Universities
- Reduce out-migration of labour from region and encourage returns
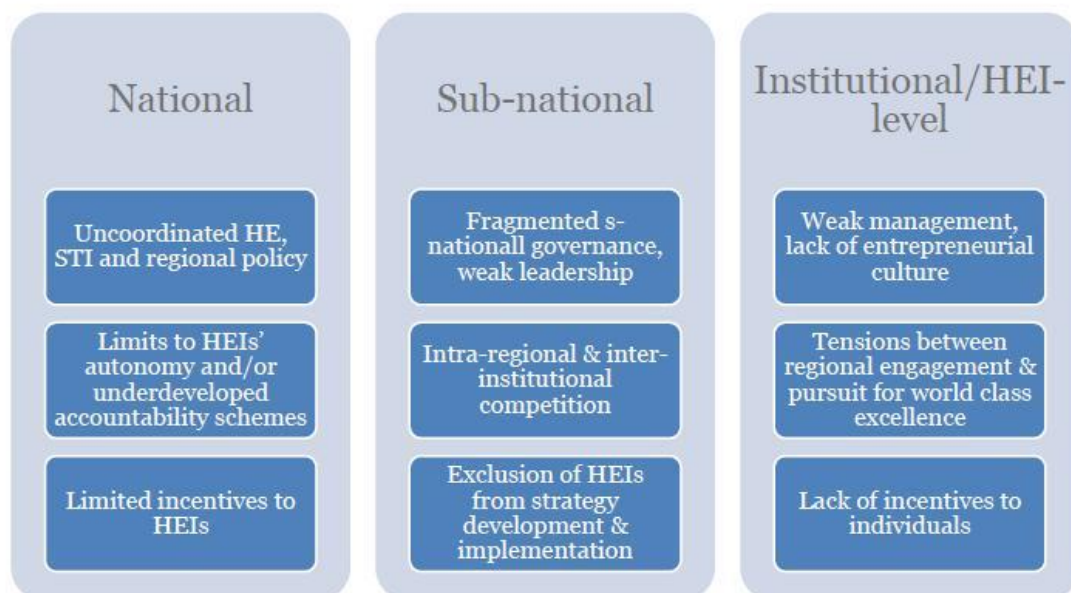- Strengthen innovation culture

In addition, a further three needs were identified as important, but not as significant:

- Strengthen research in or by companies
- Teach students skills in entrepreneurship and innovation
- Develop entrepreneurial skills in academics

The practice examples identified seek to address the broad themes identified across these nine key needs.

As the sub-committee recognised, there are barriers on the side of both business and universities. None of these are unique to North West Europe. As an example, some of the common barriers to effective engagement between universities and their wider regional economy were identified in a 2012 OECD Roundtable. These are set out in Figure 1 below.

Figure 1: Barriers to effective engagement

Source: Janna Pukka, OECD in a presentation to the OECD Roundtable on Higher Education and City/Regional Development September 2012

It is important to stress at the outset that isolated projects will very rarely prove successful. Good practices highlight how a 'platform' approach is required to address key bottlenecks. Good projects help to build these platforms. To take the

example of knowledge (or technology) transfer the National Centre for Universities and Business (NCUB) in the UK highlights four stages in boosting the absorptive capacity of businesses, and associated these with five practices to overcome different levels of barriers. Their guide is reproduced below (Figure 2) to illustrate the 'softer' elements that are often required as a part of the armoury for successful technology and knowledge exchange practices.

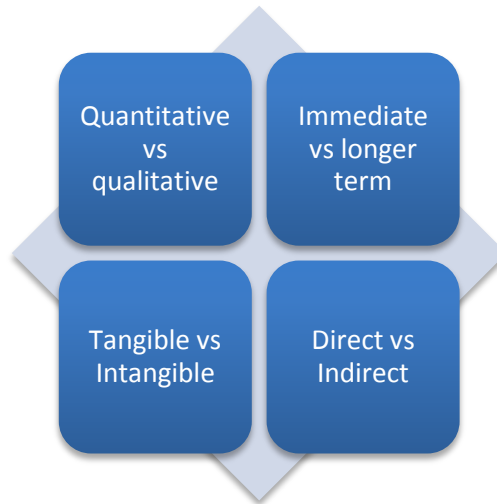**Figure 2: Staged approach to knowledge transfer**

Stages of Absorptive Capacity	Generic 5C's Model of Good Practice KT	Recognised Barriers	Known Operational Mechanisms to Overcome Barriers
Awareness	Company Opportunity Recognition (C1)	• Lack of awareness	• Case Studies and role models
		• Lack of understanding of potential in universities	• Networks; outreach and promotion by universities
		• Weaknesses in networks and information	• Active business engagement in networks
		• Finding the right information and the right partner	• Brokering Strategies
Acquisition	Co-recognition between business and university (C2)	• Institutional rules and reputations	• Culture improvement
		• Confidentiality issues	• Agreements up front
		• Legal formalities	• Trust-based relationship and skilled legal briefing
		• TTO unrealistic expectation	• Improved metrics
		• IPR issues - different (non-aligned) objectives and incentives	• Agreements up front
Acquisition	Co-Formulation (C3)	• Values and "language" differences	• Working together on problems in collaborative team
		• Timescales - University long-term; business - shorter term	• Building mutual respect and trust
		• Disciplines versus solutions	• Multi-disciplinary teams
		• Different objectives	• Partnership approach to win-win
Assimilation and Transformation	Co-Creation (C4)	• Business ability to absorb new knowledge	• Increased capacity for RD&I
		• Internal Communication	• Knowledge Socialisation
		• Change management	• Managerial / Entreprenurial learning
		• Business Learning	• Diffusions across business practice
Exploitation	Commercialisation (C5)	• Appropriate Business Models	Business Development e.g.
		• Clean IPR	• market development
		• Business Management	• market planning
		• Finance	• production planning
		• Market Access	• investment appraisal
			• implementation

Source: Ternouth et al (2012) *Key Attributes of Successful Knowledge Transfer Partnerships NCUB*

The purpose of this longer introduction is to highlight that not only should project development take into account the wider context, but to stress that the benefits of cooperative activity are not always directly observable immediately. Recent work for DG Education and Culture, European Commission (Figure 3) suggests that successful projects should distinguish between four forms of outcome, where

qualitative, longer-term, intangible and indirect outcomes should be valued as much as those that are quantitative, immediate, tangible and direct.

Figure 3: Four forms of outcomes

Source: Healy et al (2014) *Measuring the Impact of University Business Cooperation* DG Education and Culture

B. Good Practice Examples:

The following section provides examples of good practices relating to the identified themes. There are 11 examples provided, plus one short vignette (Access to Masters). Each of the examples serves to tackle one or more of the needs identified in the initial workshop. Broadly, this might be characterised in the following manner.

	Developing entrepreneurial skills	Strengthening innovation culture	Strengthening research in companies	Attracting and retaining staff	Improving communication	Knowledge transfer and 'translational' research
Innovation Campus	*	*	**	**	**	***
InnoOmnia	***	**	**	*	**	**
Invention Rooms	**	***	*	*	*	**
App Campus	***	*	*	*	*	*
Knowledge Transfer Partnerships	*	**	***	**	**	***
COFUND	*	**	**	***	**	**
Demola	***	**	**	*	*	**
National Software Academy	**	*	*	*	***	**
Subsea MSc	*	**	*	*	***	**
Industrial Doctorate	*	**	***	***	**	***
Creative Cardiff	*	**	*	*	***	**

i) Innovation Campus (ubiquitous)

Every University now seems to have, or plans to have, an Innovation Campus. It is the new Science Park or Incubator space. Numerous examples can be given, but perhaps most appropriate is to point to the common design features that most try to replicate. However, before embarking on an innovation campus development, it is important to be sure that the demand is there. Technical spaces also need to be provided that are fit for purpose and properly equipped. In Wales, Cardiff University has established the Cardiff University Brain Research Imagining Centre (CUBRIC). This is a global centre of expertise, partly because of investments in research

infrastructures that are matched only by one other centre, located in the USA. This provides a pivotal attractor for high-quality staff and excellent research. As part of its Innovation Campus it also houses the Catlysis Centre - a state-of-the-art catalysis facility supports world leading research in chemical sciences - and the Institute for Compound Semiconductors. Both are part of what Cardiff University describes as its 'translational research' facilities ie activities that are research-led but which explicitly provide facilities to help bring researchers and industry together.

'Textbook' examples of innovation centres include Pixar in the USA (shaped by the late Steve Jobs) and MIT in the USA. Lessons from these, incorporated in innovation spaces around the world, stress the importance of mixing disciplines, of work performed out in the open rather than in individual offices, and of transition zones like hallways and staircases as sites for productive contacts and interactions. Designs tend to encourage walking to promote productive 'collisions' and opportunities to mingle and meet, rather than the use of lifts. Classrooms tend to be open rather than closed off and spaces are shared and multi-functional, with flexible seating and some privacy booths.

Pixar is seen as the genesis for much of this thinking (which itself evolved from research in MIT), where "mailboxes, the meetings rooms, the cafeteria, and, most insidiously and brilliantly, the bathrooms" were located in the center of the building causing animators, engineers and others to interact on a regular basis (Interview with Brad Bird, quoted in Hayagreeva Rao and Robert Sutton of Stanford University and Allen Webb of *The McKinsey Quarterly*[1]). From the array of cases now available, four key lessons for collaborative working tend to be highlighted:
- An open plan and other design features (e.g., high-traffic staircases) that encourage accidental interactions.
- More common areas than are strictly necessary—multiple cafeterias, other places to read and work that encourage workers to leave confined offices.
- Emphasis on areas that hold two or more people, rather than single-occupancy offices.
- Purpose-free generic "thinking" areas in open-plan spaces, which encourage workers to do their thinking in the presence of other people, rather than alone.

Crucially, perhaps for actions seeking to develop spaces that promote university-business interactions, is to build in mechanisms that encourage the coming together of these communities. That is the subject for other examples set out below. It is worth noting, that the nature of the space can also influence the characteristics of

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[1] https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/innovation-lessons-from-pixar-an-interview-with-oscar-winning-director-brad-bird

users, with some operators preferring to utilise spaces that have a more 'distressed' feel to those that are modern or high-tech in character where this better suits their target audience.

ii) Integrating vocational education with entrepreneurial support (Finland)

InnoOmnia is a flagship initiative for vocational learning. Centred on Omnia, a lifelong learning hub owned by three municipalities and based in Espoo, Finland, it opened its doors in August 2011. InnoOmnia offers:

- Entrepreneurship support for present/would-be entrepreneurs, mainly from arts and crafts or the service sector
- Work-based/on-the-job learning programs for the vocational education and training (VET) of upper secondary students
- Innovation and piloting for new pedagogy for vocational teaching and learning, e.g. gamification, mobile learning, entrepreneurial teaching methods
- Teacher and school leader professional development for K-12 and vocational sectors

Somewhat uniquely, InnoOmnia forms a community where teachers, students and entrepreneurs 'share the same coffee pot'. All spaces are learning spaces and everyone is both a learner and a teacher. InnoOmnia's development projects pilot different aspects of 21st-century vocational learning, e.g. teaching real-world skills, using mobile technology and cloud-based learning to improve learning outcomes, learning through entrepreneurial projects.

Innoomnia is located on the campus of the educational development center Omnia Kirkkokatu in Espoo, Finland. Sponsored by the National Council for Education in Finland the project provides hands on learning opportunities for students from 16 years of age and offers support to entrepreneurs. It aims to combat educational and social problems such as unemployment, especially among young people; overcome the low appeal of vocational education and tackle the difficulties encountered by prospective entrepreneurs.

In the Centre, entrepreneurs run their businesses jointly with students and teachers. The space is an open and collaborative one, characterized by interaction and the sharing of experiences. It offers different programs such as education, vocational training and support for entrepreneurship, especially for startups in the areas of arts and services. For students in their final years of high school, innovative teaching methods such as gamification and mobile technology are used. Participants are able to choose what they wish to focus on, with students developing a personalized

learning plan. Students and teachers collaborate with the entrepreneur to seek out and create innovative solutions to help each business succeed. This activity gives students an opportunity to 'get their hands dirty' and learn by doing. Professional development for teachers and educational leaders relating to all areas of basic and vocational education is also promoted.

Since 2011, the project has supported at least 110 would-be entrepreneurs in setting up sustainable businesses and around 600 students have also benefited from on the job learning. Additionally, a total of 742 teachers and school leaders have been trained in methods of teaching entrepreneurship and educational technology. Seven hundred campus employees have now had contact with this new pedagogical approach, along with 2,700 visitors. The project has also received national and international awards for educational innovation.

iii) The Invention Rooms (Imperial College London, UK)

Imperial College is home to a range of start-up and spin-out companies which started life in their labs, hackspaces, incubator and coffee shops. To build on this success the College runs the Imperial Advanced Hackspace network, which gives access to cutting-edge prototyping technologies and workshops. The aim is to help staff, students, alumni and commercial partners rapidly convert research ideas into breakthrough products. The intention is to launch a new venture called: the Invention Rooms.

The Invention Rooms is a unique new space planned for the new Imperial College facility at White City (London). A mixture of workshops and interactive spaces, it will allow members of the community to come together with our staff, students, alumni and partners to test out their creative ideas, and share in the excitement of research and innovation. It features a number of distinct zones:

- Reach Out Makerspace – a workshop and design studio for young people from the local community. A programme of activities will offer hands-on experience of prototyping new products and models – from wearable technology to household gadgets. The aim is to transform lives by sharing practical skills in design, innovation, manufacturing and entrepreneurship, and to build young people's confidence.
- Interaction Zone – a vibrant public events space where local people and College partners can discuss science and connect with Imperial's research through a wide-ranging programme of events and activities. There will be meeting rooms for seminars and classes, as well as an informal café area for social events, exhibitions and community activities.

- Advanced Hackspace – a workshop environment providing access to specialist prototyping and manufacturing equipment for a 2,000-strong network of inventors and entrepreneurs from the College's student and staff body. These facilities will include workshop technologies, such as robotics and 3D printing, and a bio-lab, which enables synthetic biology and molecular fabrication.

iv) App Campus, Finland

AppCampus was 3-year project collaboration between Aalto University in Finland, Nokia and Microsoft. Launched to the public in May 2012, AppCampus offered grants and training to developers of applications (apps) for the Windows Phone platform in exchange for an exclusivity agreement requiring that the app not be released on competing smartphone platforms for at least six months after its Windows Phone launch.[2]

For Aalto University, the collaboration was an opportunity to have a significant social impact by facilitating the creation of new businesses and new employment in the local area, and to further develop their reputation for mentoring and acceleration of new businesses. For Microsoft and Nokia, the objective of this collaboration was to bring through a number of high-quality, innovative applications first launched on the Windows Phone platform, which could act as a decisive factor in customer handset choice.

It was funded by Microsoft and Nokia (who contributes €9 million each), and managed by Aalto University in Finland, who covered the operating costs of around €3 million. Nokia and Microsoft provided funding, connections for AppCampus to their other developer-focused initiatives, and merchandising support for applications funded by AppCampus once they were released. All day-to-day operations were carried out by AppCampus staff, who were employed by Aalto University.

It aimed to attract software application developers to the Windows Phone platform. The available grants ranged in size from €20,000 to €70,000, and submissions went through a stringent selection process with an emphasis on app novelty and quality. In particular, applications submitted to AppCampus should not have previously been released on a competing platform, and they should support key features of Windows Phone software and hardware.

AppCampus helped more than 300 teams to publish some 315 apps during the 3-year program. According to a study among the AppCampus teams, the program

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[2] The required exclusivity period was reduced to 90 days at the end of March 2013.

helped to create at least 850 new jobs, of which 59 were in Finland. Altogether 4300 teams from over 100 countries applied for the program.

v) Knowledge Transfer Partnerships (UK)

Knowledge Transfer Partnerships (KTPs) are a long-standing national initiative, where they have attracted significant national government investment. KTPs enable businesses with a strategic need to access a University's expertise and knowledge to improve their competitiveness, productivity and performance. The scheme involves a high calibre graduate (KTP Associate) working in a company with academic supervision. This often results in strategic advantages for the company; academic benefits to the University and valuable industrial experience to the Associate.

Each KTP is a 3-way partnership between:
- a UK-based business of any size or a not-for-profit organisation
- an academic or research organisation. This could be a university, college or research and technology organisation in the UK
- a suitably-qualified graduate, with the capability to lead a strategic business project

A KTP enables a business to bring in new skills and the latest academic thinking to deliver a specific, strategic innovation project through a knowledge-based partnership. The academic or research organisation partner will help to recruit a suitable graduate, known as an Associate. They will act as the employer of the graduate, who then works at the company for the duration. The scheme can last between 12 and 36 months, depending on what the project is and the needs of the business.

A KTP is part-funded by a grant. The business needs to contribute to the salary of the Associate who will work with the business, plus the cost of a supervisor who oversees the scheme. The amount contributed by the business depends on the scale and length of the project. It also depends on the size of the company:
- a small to medium-sized enterprise (SME), contributes a third of the costs. The average annual contribution to a project for an SME is around £27,000
- a larger business may need to contribute up to half the cost. The average annual contribution to a project for a larger company is around £40,000

vi) COFUND Fellowships (European Union)

The EU's COFUND initiative (DG Education and Culture) is able to support individuals - both **doctoral candidates** and **experienced research fellows** – in their research and career development. Participating organisations receive a fixed amount for each supported researcher as a contribution to the living allowance of the researcher and to the management costs of the programme.

Some regions, such as Wales, UK and South Moravia, Czech Republic, have combined COFUND with ESIF funds to support the attraction, or return, of Fellows to universities in the region. It is this aspect that can make it a positive practice example of how to attract and retain skilled workers, and to encourage the return of those who may have left at a previous stage of their career cycle.

To take the example of South Moravia: SoMoPro is a COFUND Marie Curie project, a regional grant programme backed by European funding set up to attract skilled researchers to the South Moravian Region. SoMoPro lasted for four years (2009 - 2013) with an overall budget of 3 887 158 EUR, 60% of which was financed by regional public sources (Region of South Moravia) and the remaining 40% co-funded by the European Commission through the Marie Curie Actions (COFUND project). It was designed to attract skilled researchers from Czech Republic and abroad to come and carry out their work in South Moravia.

The idea behind COFUND is simple: to leverage and structure the impact of funding in research in Europe. In the case of SoMoPro, institutions involved in the project include the South Moravian Region, the Masaryk University, the Czech Rectors Conference, the University of Technology in Brno and the South Moravian Centre for International Mobility.

In South Moravia, the projects funded covered a wide range of disciplines including:
- regulation and function of P-TEFb complexes
- protein-carbohydrate interactions: pathogen recognition phenomena
- noise in semiconductor detectors of X-ray and gamma ray radiation
- fine-tuning of haloalkane dehalogenases by access tunnels re-engineering
- development of zygotic and somatic embryos in conifers - from basic studies to practical application
- synthesis of self-organized, templated and surface-supported metal and metal-oxide nanostructures for being used in advanced micro- and nanodevices.

In Wales, the COFUND programme is used to support both professorial and research fellows in those sectors identified as priorities in its smart specialisation strategy. All Universities in Wales are able to benefit from the approach, with a strong emphasis

in securing close working relationships between the fellows and local business partners.

vii) Demola (International)

Demola is now an international structure, with 18 locations around the world. Through a structured approach it gives multidisciplinary student teams the opportunity to work with companies to develop novel products and services based on company needs and interests. Demola activities are challenge driven, with the project ideas coming from the industry and other organizations. The students' work is supported by both the industrial and academic partners, whose role is to provide guidance to the student team throughout the project. Demola provides the workspaces for team work and co-creation. Companies range from local SMEs to international large-scale enterprises as well as public organisations. It is based on international, interdisciplinary networks; concepts of co-creation; a structured process and an agreed framework guided by simple procedures for licensing, intellectual property rights and so forth. For students, all Demola projects are a part of their degree programme, and so they gain credits towards their degree, the student team also owns the IPR for the results of each project, which the partner company can purchase or license. This also means the project is without financial risk to the company, as they pay only for results. The programme is based on five main steps:

1 - Challenge proposition: proposition of the challenge, problem definition and corporate requirements (eg in-house validation). No starting fees

2 - Initial meeting : initial meeting, sharing of ideas, definition of the brief; signature of the Demola project contract

3 - Supervised meetings: supervised meetings and workshops

4 - All-day event jam: brings together all the Demola teams to work on challenges and solutions.

5 - Feedback meeting: feedback from the company/organization and meetings with innovation team. Pitching event concludes.

viii) National Software Academy (Wales).

The National Software Academy emerged from a recognition that local firms were struggling to find sufficient software engineers and that graduates were not 'job-ready'. It is a joint initiative between Cardiff University, Welsh Government, local business and the Alacrity Foundation (a private-sector initiative).

The National Software Academy provides a new model of undergraduate teaching based upon project-based learning. All projects are business-led. A standard degree-programme of Cardiff University, all graduates emerge with a Cardiff University degree at the end of the three-year course. Establishing the course was not easy, even with the support of the Vice-Chancellors of both Cardiff University and the University of South Wales, some professors were reluctant to engage. In the end the University of South Wales decided not to participate. Businesses have proven to be very supportive and more than 170 are now involved, ranging from very small micro-businesses to major multinationals. Informal agreements are reached to ensure that students are not 'poached' before they have finished their degrees, but many are holding job-offers before their graduation.

The National Software Academy is now expanding to occupy new space in Newport. The Academy is part of Cardiff University, but sits in Newport, a neighbouring city that is located 20 minutes by train from Cardiff. Students travel to this teaching space for 3 or 4 days each week, but are also taught in Cardiff at the main University campus. The Academy teaching space is set up to mimic a typical office that software engineers might occupy and so is not a traditional university lecture space. This includes the provision of tea and coffee facilities, a dishwasher and kitchen space, which is highly unusual in a student teaching facility. Brokering this within the University has proved to be challenging at times.

Teaching staff are drawn from traditional academic faculty and from businesses. Staff from business are encouraged to see the Academy as a stage of their career rather than a permanent career move. The Academy is also expected to contribute to the University's research outcomes and so the balance between applied research, teaching and more fundamental research remains critical.

ix) Subsea MSc and Foundation Degree (UK)

The subsea project was a collaboration was between Newcastle University, Newcastle College and Subsea North East, a cluster of businesses operating within the Subsea Sector to develop an MSc in Subsea Engineering and Management at

Newcastle University and a Foundation degree in Subsea Engineering at Newcastle College.

The project emerged from a successful bid, led by Newcastle University, to the Regional Development Agency's Higher Level Skills Capacity Fund[3] to develop a range of subsea specific skills provision in the region. The collaboration took place over the period 2009-2010 and was based around established relations between the organisations involved.

A cluster of Subsea sector firms already existed in the North East of England and there was the beginning of a solid relationship with Newcastle University. The subsea sector identified a key priority for them as higher level skills and the difficulty in being able to recruit technical staff, they also wanted their engineers to be provided with appropriate continuous professional development. The Industrialists also wanted to raise the profile of Subsea, helping to engage with young children through schools. They saw both the short term skills needs and the longer term problems if these issues were not addressed.

The project secured funding of £0.582 million from One North East towards a project worth £1.8 million, with the remaining amount being funded by contributions from Newcastle University, Newcastle College and firms in the region's subsea industry. The project brought together industry and academia to develop new content appropriate to the subsea industry; financed the development of a bespoke control room, for practical instruction; developed a series of technical seminars to showcase cutting edge developments; involved students in collaborative projects with subsea firms, and worked in partnership with other organisations to raise awareness amongst children and young people of the opportunities that were available in Subsea Engineering. The course involves substantial industry engagement with guest lectures from world renowned industry experts, industrial projects, and site visits.

x) Industrial Doctorate (multiple examples)

An Industrial Doctorate is an opportunity for people currently in employment to undertake an industrial-focused three-year equivalent research project where they are jointly supervised by the employer and a University, allowing the individual to get a PhD education while in employment.

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[3] The Regional Development Agency was called One North East. It was established in 1999 and wound up (along with all RDAs in England) in 2010.

The individual is employed by a private company during the entire programme, while being registered as a PhD student at the University. The individual focused their research on industrial issues or problems relevant to the company (probably on a topic they already work on) and will be jointly supervised by experts from the company and the University.

Usually, the individual spends all their working time on the research project and PhD education. Normally, you'll carry out the project within the company premises, where appropriate, they might attend the University to carry out some aspects of the research. In certain circumstances, the Industrial Doctorate can be taken part-time over longer period of time to allow the individual to blend the research with the business needs of the partner company.

The Industrial Doctorate Programme is subject to the full requirements of a conventional PhD in terms of regulations, academic rigour, supervision and examination, administration and fees.

The programme also helps to create growth in the business community through the cooperation on research and innovation between the University and the partnering company. In addition, it can enable knowledge transfer and networking between partnering companies and researchers within the University, and wider afield as they engage with the University's networks.

x.b) Access to Masters (Wales)

Not all companies have need of PhD-level research. For some it is too complex, too risky or too long a time period. For many firms a Master's level student may be a more appropriate student partner. One approach that was trialled in Wales, was to provide funding for students to undertake a Master-level degree course, to include a short 4-6 week project involving an industry partner. Whilst broadly successful, the initiative struggled to gain traction with Universities in Wales, owing to the costs that they had to bear.

xi) Creative Cardiff (Wales)

Creative Cardiff is a network connecting people working in any creative organisation, business or job in the Cardiff city-region. The network aims to bring together people from across the full breadth of the city's creative economy – from dancers and marketing professionals to architects and app designers.

Creative Cardiff evolved from the interests and experience of two professors based in Cardiff University and chimed with national policy seeking to promote the role of the creative economy in economic and social development. It has the support of Cardiff University's Vice-Chancellor and of the City Council for Cardiff. This provides funding for two to three staff members for around three years.

Using the power of social marketing, networking and demonstration activities Creative Cardiff has formed a powerful network of members who come together around areas of common interest. The Director emphasises the importance of recognising that Creative Cardiff is the membership itself, that the Director's role (and that of colleagues) is simply to facilitate this voice and action.

Where funds are needed for additional activities, such as running a recent pop-up Enterprise Hub, Creative Cardiff has to raise this from other sources. The value of Creative Cardiff has been in mobilising a traditionally fragmented sector, raising its profile and its voice, building critical mass between actors to enable them to do more activities commercially or socially and, for the academics involved, enabling applied research in real world contexts.

There are many examples of similar networks, many of which focus on linking firms and universities more directly in terms of innovation networks.