



WP2/D2.4



**DocEnt Project**  
**DOCENT Feasibility Study**  
**Deliverable 7**

This product has been produced as part of the DOCENT Project.

DOCENT - DOctors in ENTerprise is a 24 month project financed by the European Commission Lifelong Learning Programme – ERASMUS/ Multilateral projects/ Cooperation between Universities and Business.

The project aims to contribute to enhancing the employability of technical and scientific doctoral candidates through the development and testing of:

- a model for the provision of careers services specific to doctoral candidates and graduates capable of innovation and effective knowledge transfer, whether as an employee or as an entrepreneur. It also includes guidelines for integration/coordination between University functions;
- training modules to be offered within this careers services framework to support the professional development of doctoral candidates and graduates, in particular opening up opportunities beyond academia, and underpinning the development of transferable skills.

Partners in the DOCENT project include:

**Promoter**

- ASTER – Associazione Scienza e Tecnologica Emilia-Romagna, Italy

**Partners**

- Confindustria Emilia-Romagna, Italy
- Università Degi-Studi di Modena e Reggio Emilia, Italy
- COEPA – Confederacion Empresarial de la Provincia de Alicante, Spain
- Fundeun – Fundacion Empresa Universidad de Alicante, Spain
- CRAC – the career development organisation, UK
- University of Malta

**Associate partner**

- Fondazione CRUI, Italy

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## **SUMMARY**

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## 1. BACKGROUND

The Docent Project aims to enhance employability of technical and scientific PhD candidates through the development, testing and exploitation of innovative training modules for the development of transferable skills not only for public research but for all areas of the labour market.

Doctoral graduates have the potential to be key actors in the creation of innovation and knowledge-based economic growth in any economy at National, European and Global level. Doctorates are most likely to contribute to the advancement and diffusion of knowledge and technologies. The modern doctorate is seen as an excellent training programme for those who go into roles in industry beyond research and education. There are numerous European and national policy drivers that support the transition of doctoral graduates into careers in a range of employment sectors other than the traditional academic in a University<sup>1</sup>.

Europe produces many more doctoral graduates than there are academic positions available. This means that there is need for Universities to ensure that PhD graduates are not only trained to develop those skills needed to work in academia, but to also develop those skills which they would need to work, research and generate knowledge as part of the innovation and development process within industry.

## 2. INTRODUCTION

One of the first aims of the Docent Project was to identify the current European landscape in terms of both training in transferable skills for technical and scientific PhDs and career guidance services to support career paths for researchers outside academia.

Thanks to the survey “Transferable skills and employability for doctoral graduates: survey of the current landscape” developed in the first phase of the project the partnership has been able to identify a list of key transferable skills for doctoral candidates and graduates around which training modules have been built .

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<sup>1</sup> For further information please read the document produced by Docent “Transferable skills and employability for doctoral graduates: survey of the current landscape”, [www.docentproject.eu](http://www.docentproject.eu)



The survey has involved, through the realization of 40 interviews, experts belonging to the academic and business world coming from the different countries of the Docent project partners, experts at European level and representatives of national or European networks in field of training, guidance, innovation and technology transfer. Besides this, the partnership has also reviewed and analyzed relevant literature and, collected all information coming out from these interviews and documents, has completed the survey with the production of a report, available in the three Docent partnership languages on the project website<sup>2</sup>.

The results of the survey have been used by the partnership as a starting point to identify the needs and gap in term of training of transferable skills and in terms of career services for doctoral candidates.

Using the findings of this survey as a basis the DOCENT partners developed two main products:

- The “Docent Training Paths”: training modules for the improvement of transversal skills, useful to develop the profile of a new industrial researcher able to innovate “inside the enterprise” or “by setting up his/her own businesses”; the Docent Training Paths offers a training model based on 18 learning units grouped within 5 training modules to be implemented within a careers services framework to support the professional development of PhD candidates and graduates, in particular opening up opportunities beyond academia, and underpinning the development of the necessary transferable skills.

Following the list of the designed 18 Learning Units (LUs) organized in 5 training modules:

TRAINING MODULE	LEARNING UNITS
<b>1. MANAGE YOUR CAREER</b>	1.1. Career management skills and employability 1.2 Recognise and promote your skills 1.3 Gaining employment
<b>2. OPPORTUNITIES OUTSIDE ACADEMIA</b>	2.1 Business culture 2.2 Commercial awareness 2.3 Knowledge of the labour market
<b>3. WORKING WITH OTHERS:</b>	3.1 Leadership

<sup>2</sup> [www.docentproject.eu](http://www.docentproject.eu)



	3.2 Networking 3.3 Science communication for a knowledge-based society 3.4 Conflict management
<b>4. MANAGING PROJECTS:</b>	4.1 Funding, finance and resources 4.2 Project management 4.3 Budgeting in a nutshell 4.4 Intellectual Property management
<b>5. BEYOND EMPLOYMENT</b>	5.1 Creativity 5.2 Entrepreneurship 5.3 Resilience and risk-taking 5.4 How to write a business plan

- The Docent Career Service Model: a model of career service for the integration and coordination of several services currently fragmented in TTOs/KTOs and University Career Centres, in order to allow career and information services to fit better with the specific needs of candidates of the third cycle; it identifies the support that doctoral candidates and graduates need in order to develop a wider view of their career possibilities, as well as to learn how to further their personal and professional development to complement their training as researchers.

The Careers Services Model has been developed with the aim of helping Candidate and Graduate doctorates to consider careers: within and beyond academia; research and non-research careers; as well as employment and self-employment.

The careers services model focuses on two aspects of doctorate candidates and graduates' needs. One aspect related to career management, skills and employability relates to supporting doctorates with their career management. The proposed services are to provide support to doctorate candidates to help them learn how to appreciate their general skills. It also aims to help doctorates to learn how to plan and manage their career in order to improve their employment chances and employment. The second



aspect of the careers model focuses on opportunities for doctorates beyond academia, with actions aimed both at employers and academics to raise the profile of doctorates and what they can contribute to the non-academic sector, and to help doctorate candidates and graduates contemplate the option and appreciate the opportunities for employment outside academia.

For this purpose the model foresees two macro functions of the career service:

- Supporting and Promoting Career Management, skills and employability
- Supporting and promoting opportunities beyond academia

Each function contains its main goals.

The goals of the careers service in view of promoting career management of doctorate candidates and graduates thus are:

- on the one-hand, to promote the value of doctoral training, across a wide range of career paths, to all stakeholder groups, and thus widening employment opportunities for doctorate graduates; and
- on the other-hand, to support doctoral candidates and graduates:
- to set and work towards personal career-related goals in the context of a broad employment market or as an entrepreneur; and
- to recognise and promote the transferability of their skills and to meet development needs appropriate to their set career goals

The goals of the careers service with respect to supporting and promoting opportunities beyond academia are to:

- Raise awareness of non-academic career paths for doctoral graduates, both as employment and self-employment;
- Identify opportunities for doctoral candidates and graduates to gain experience, in order to develop the knowledge and skills demanded by a non-academic career;
- Offer guidance on recruitment processes outside academia; and
- Promote recruitment by establishing connections between doctoral candidates and graduates and employers.



In each function these main goals have been expanded into a number of objectives and translated into activities and products and resources.

The present document aims at evaluating the sustainability and the impact of the these two main Docent Project results allowing at meantime to exploit them.

In order to develop this documents the partnership has worked in the exploitation phase of project following the same methodology, provided by the WP4 leader Aster.

The methodology of work for collecting information foresaw the involvement of stakeholders at two levels:

- at local/regional national level involving stakeholders in the different partner countries belonging to
  - Universities Association
  - Association of chancellors
  - Regional/National Governmental policy makers
  - Agencies for Innovation and Technology Transfer
  - Training Provider at national/local level
  - Business Association
  - Career guidance associations
  - National Resources Centre for Guidance
  - National Guidance Forum

For this purpose have been organized restricted technical seminar in each partner country, involving at least 2 local/regional/national stakeholders.

- at European level involving European network and European Institutions operating in the field related to the project issues. For this purpose the project foresaw “at distance” involvement of European networks and Institutions active in the field of higher education, guidance, technology transfer and innovation policy, have been involved sending them, by e-mail, the main products of the project asking for a written feedback.

This kind of approach allows to understand which impact can have in the different European countries initiatives like Docent in consideration of the their own state of art on these themes. At the meantime it gives the opportunity to evaluate the perception of what is necessary till to act at European level, individuating the best practices and allowing to exchange them.

For this purpose the partnership would like to thank all stakeholders that offer their feedback on the project results.





For the exploitation at national level in particular participated to national technical seminars:

In Italy:

Emanuela Stefani, CRUI Foundation

Natalia Paganelli, CRUI Foundation

Nicoletta Amodio, Confindustria

In UK:

Deirdre Parker, Careers Advisor, University College Cork (Ireland)

Christine Morris-Lucas Aberystwyth University Career development Officer (Postgraduate Skills Training Programme)

Rachel Walls, University of Oxford, Careers Advisor for Research Staff

Ghislaine Dell, University of Bath, Researcher Career Development Adviser

Clare Jones, Careers Advisor, University of Nottingham

Eve Uhlig, Career development advisor, Loughborough University

In Spain:

Manuel López Puerma, SERVEF

Iñigo Gorostizaga, Chamber of Commerce of Alicante

In Malta

Anton Bartolo, Knowledge transfer office, University of Malta

Richard Miuscat, University of Malta

For the exploitation at European level the following networks and institution has been involved, and have provided their feedback:

EuroExess network Kitty Fehringer

Eurodoc, Meng-Hsuan Chou

Euroguidance, Concetta Fonzo

Enterprise Europe Network, Seimed Consortium, José Valero

Fundación Comunidad Valenciana-Región Europea, Manuel Irún

Marie Curie Fellows Association, Maria-Antonietta Buccheri

Marie Curie Actions Unit, Audrey Arfi



The following is a synthesis of feedbacks relevant to this project, based on those made directly by the stakeholders involved in the exploitation phase.

The most frequently made suggestions and recommendations were around the following areas:

- Suitability of DOCENT project results for training and guidance need of European doctoral candidates and graduates
- Opportunities and constraints of the DOCENT results
- Sustainability of project results
- Guidelines for the adoption of DOCENT results

### **3. DOCENT PROJECT RESULTS: THEIR SUITABILITY FOR TRAINING AND GUIDANCE NEED OF EUROPEAN DOCTORAL CANDIDATES AND GRADUATES**

The European Research Area needs to develop strong links with education and innovation. The Life Long Learning Programme will help provide the next generation of young professionals, teachers and trainers with innovative skills.

The results/outcomes obtained from the Docent project are considered very interesting in the European context, where emerge the relevance to invest in human capital to make innovation. For instance, on June 29 2011 the EU issued a budget proposal in R&D&I which increased the budget by 43%, from €55,000 to €80,000. Consequently, this reveals the emergence of programmes that focus on training innovation managers in companies (innovation-based training), either as employees or as entrepreneurs.

Concrete actions like Docent Project should be taken in the context of the evolving financial crisis to channel financial support for research and innovation to areas of crucial importance for European competitiveness. Excellence in research is the very basis of the Europe 2020 strategy. The focus on results and impacts has emerged as part of the Budget Review discussion considered as a key tool for implementing Europe 2020 and the Innovation Union. The Common Strategic Framework should forge a better strategy for innovation, involving end-users and generate measurable socio-economic impact.

The Docent results (Training Paths and Career Services) are positive contributions to ongoing EU/European efforts in becoming the global leader in innovation.

From the information and opinion collected at European level the Docent results could link to ('feed') the Marie Curie 'innovative Doctoral Programme' initiative. This initiative comes within one of 3 'modes' for early-stage researcher training; all 3 find transferable skills and collaboration with business to be important.



It has been underlined that some of the topics of Docent Training Paths are currently neglected in doctoral programmes and it has been highlighted the Docent approach around raising awareness (of skills, of career possibilities, of existing tools/opportunities) as a strength.

However in this framework it is necessary to consider the different situation in each European country.

We are now facing a major challenge since there are different paces and work methods at play when it comes to transferring doctoral graduates into companies in EU countries. Each of the products accomplished by the Docent Project should be adapted to the specific territory where they will be implemented. For instance, in the UK and Germany, doctoral graduates are more highly regarded by companies which are, consequently, aware of their differential qualities compared to other professional profiles. It is important to encourage business to capitalise on their knowledge (know-how). Therefore, if the Career Service provides companies with employees whose skills can be applied to a specific market (and can generate value), great progress will be made and goals will be attained.

How can we underscore the value of doctoral graduates know-how? Solving this issue from the Career Service would create a turning point that would increase the number of doctoral graduates accessing the business world. It is important to bear in mind that doctoral graduates are the greatest channel used to transfer technology into the business environment.

For that concerns Italy the framework seems to suffer from an insufficient awareness of the value of doctoral training, partly due to the composition and typology of the industrial system (Italy is a “moderate” to “low” innovator in the main reference documents at EU level concerning Innovation): this aspect should be further addressed by the model (i.e. awareness raising activities and promotion addressed to the entrepreneurs in order to make them aware of the best experiences and activities carried out by PhD holders). Awareness raising activities for PhD holders on career paths outside academia is correctly identified but should be complemented with awareness raising activities in enterprises further involving the contribution of PhD candidates, while the dimension of career opportunities should be enlarged to an international landscape.

Taking in consideration another Mediterranean country like Spain emerges that its business culture does not focus on innovation, however, there are a number of specific companies that are betting on this strategic path. Spanish business reality reveals a low awareness regarding what a Doctoral graduate can actually do and how they can contribute to a business. In order to overcome this gap, it is important to inform the business world about these two products that the

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Docent project has conceived with a view to changing the business culture, particularly in terms of SMEs whose resources are more limited.

It would be interesting to enhance the professional skills that will enable Doctoral graduates to their access jobs in private companies. The defined learning units will provide PhDs with the business perspective they currently lack. The contribution is extremely significant in terms of entrepreneurship, since the number of “spin-offs” needs to increase and could appear as an interesting job prospect. This path lies ahead of us, and it should be underpinned by every public institution involved in the labour market and by business associations that support innovation.

The findings of the Docent project will unquestionably contribute to increasing the employability of Doctoral graduates and will enhance the levels of business innovation if PhD candidates are working when they commence their PhD. This situation would allow Doctoral graduates to acquire the skills required by private companies.

On the other hand also countries like UK that have already a deeper experience in the training of transferable skill and in career service, recognise the relevance of the Docent results. Most UK institutions include much of the subject matter in training programmes already available to their researchers. Not all these training programmes are tailored to doctoral candidates and graduate however.

Much of what the careers services model proposes is already being done by many UK institutions however the Docent careers services model could be useful, in particular, for

- gaining high level acknowledgement of a need to support a careers services tailored to doctoral candidates and graduates
- considering how services currently offered by different university functions could be joined up more effectively
- as a ‘good starting point’ to consider or re-consider provision of career services

From the point of view of the contents developed in the Docent results there is the general interest of the involved stakeholders both at national and European level.

The following value-added aspects are emphasised: the Training Paths and modules are exhaustive, comprehensive and easy to understand; they address key issues that are salient at both national and European levels. The Career Services offer a structural blueprint (Permanent Observatory) for enabling sustainability of non-academic career paths for doctoral candidates and graduates. The matrix identified in the career service model is a complete and extensive catalogue of services, activities and tools.

The results of Docent project represent an interesting and valuable theoretical framework on main issues to be addressed in the implementation of a service for career management for

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doctoral candidates and graduates on the one hand and secondly on the possibility of approaching career paths different from the academic one through a range of training modules for doctoral candidates and graduates.

The training path model is an appreciable effort to standardize formats and contents and identify a coherent framework in which the main issues concerning professional development for PhD holders are addressed. It is particularly valuable that also toolkits for tutors and trainers are identified. However it should be noted that the duration of each module (1 to 2 hours) seems a little too tight to reach the learning outcomes identified and the level of interaction required. The effectiveness of the training should be carefully assessed and also the profile of the trainers identified coherently with contents and objectives.

In general the training paths are of interest and it is recognized the coherence with the need of the different European countries, in different ways and at different level.

## 4. OPPORTUNITIES AND CONSTRAINTS OF THE DOCENT RESULTS

For a right evaluation of the opportunities and constraints of Docent results it is necessary also in this case to consider the European prospective and that of the single countries.

Whilst the current economic downturn does not contribute to facilitating the smooth adoption of Docent results, the general variance in resources and funding availability throughout Europe/EU (between European-, national- and regional-levels; universities and research bodies) constitutes an important barrier. This is especially problematic for implementing the Career Service model; for instance, career services in Greek universities are dependent on European funding (they are not part of the university budget), which challenges sustainability and coherent planning. This aspect must be carefully considered and addressed when promoting the Docent results because they may further exacerbate the growing innovation divides in Europe/EU.

Another important constraint concerns the issue of **quality assurance**:

How would the adoption or implementation of Docent results be assessed?

Would this be conducted at a pan-European scale, regionally or at the individual universities and research bodies? This concern is closely related to the question of product differentiation.

Whilst on one hand the Docent products are welcome, on the other hand it is important to note that most of the Training Path modules mirror those found in MBA programmes (e.g. module 5 on 'Beyond Employment' where 'entrepreneurship', 'resilience and risk-taking' and 'how to write a



business plan' are highlighted). Would implementing the Docent products result in an additional certification or would participation in these modules be at the expense of other research activities? It should be noted that, for those doctoral candidates interested in following the entrepreneurship route, they often obtain an MBA degree prior to or after their doctorate and this effort is evidenced in an additional degree and is preferred.

These constraints, if carefully and thoroughly addressed, should not prevent the adoption of the Docent results; especially because the documents are detailed and relatively easy to use. All interested parties are therefore strongly encouraged to discuss and explore ways of overcoming these barriers.

Another main problem is the need for a cultural change on behalf of academia and business. In many cases this change will be slow, but it will, definitely, be necessary.

It is important to note that for example many Spanish doctoral graduates have decided to work abroad and are applauded for their entrepreneurship and creativity, whilst in Spain their work goes unrecognized by the business environment. Therefore, something is clearly not working (educational model, low market-focus, managerial skills,...).

In Italy emerges that the Career Service Model proposed by Docent service is quite wide and ambitious, therefore the first constraint would be surely represented by available resources. Moreover, as universities are experimenting some financial constraints, this could become a serious and real problem. But an opportunity to integrate some of the elements addressed in the Docent project could be the implementation of the new national regulations (underway in Italy) concerning doctoral studies at universities, as additional element of attractiveness (linked to the institutional strategy of the university); another opportunity would be the setting up of career advice services at regional level and with a regional support.

Form the point of view of the stakeholders involved in UK there's an opportunity to raise awareness at senior level in universities of need for/benefit of career development support specifically aimed at PhDs.

In UK many of the bigger institutions have 1 or 2 staff members with specific responsibility for researcher career guidance but more could be done to tailor career guidance provision to researchers.

The Docent careers services model seems an aspirational one in terms of co-coordinating between university functions, also if in UK most careers advisory services and training provision services work closely together already, it emerges that there are not usual strong current links across other related functions (e.g. TT).



In some UK institutions there's more to be done specifically around employment/career development for PhDs, whereas a lot of support is already available to develop other transferable skills. For that reason some of the Docent learning units could be of interest.

In UK staff from careers guidance facilities are or will be working with academics, both to increase recognition of the need to prepare PhDs for non-academic careers and to support them in delivering part of the university's career development service for PhDs. Academics will increasingly be looked to as providers of these 'services' (due to a reduced funding environment in the UK).

Considering a global approach the Docent materials represent a good opportunity to share approaches across the EU.

For example there are not structured action for specific careers service that assists Doctoral graduates as they look for a job. The only existing actions have been developed by specific universities and group Doctoral graduates with other graduates in the same bundle. It would be particularly interesting to focus specifically on PhDs, and to consider their particular features to develop a series of activities focused on the stakeholders. In this sense, the Careers Service should manage the range of activities designed for PhDs, companies, universities, research institutions, associations and university lecturers and professors.

In this view several opportunities and constraints, following resumed, should be considered when implementing the Training Paths on transferable skills and the Careers service model:

## Opportunities

### Docent results

- permit to construct bottom up
- reform training to provide researchers with the transferable skills required in innovative enterprises.
- permit to set up new careers services where there are none/few
- include mobility in the Career Service: it is important to create an attractive, open and sustainable EU labour market for researchers, to recruit and retain high quality researchers and to attract talents
- rise the employability to doctoral graduates;
- provide an international shape to doctoral graduates;
- promote the European dimension in lifelong guidance and learning.



- promote cultural change (in academia, with employers)
- as a means of raising awareness of researchers' skills but also of career possibilities

### Constraints

- Un-attractive employment conditions in EU several countries
- Administrative and legal burdens: a clear example is the difficult barrier that appears in the shape of the European tax requirements applicable when hiring a PhD from a different country.
- Lack of recognition of mobility in career appraisal and career advancement and
- Lack of competition based on internationally open recruitment
- low focus on international mobility;
- raising funds for careers services
- low awareness of these issues across research institutions

### Difficulties

- to involve the academic staff and create collaboration with not academic staff;
- to insert the training and guidance services in the general curricula of doctoral candidates;
- to insert further and even higher training levels, advanced learning in high contexts;
- to create a permeate approach to skills development of doctoral candidates.

## 5. SUSTAINABILITY OF PROJECT RESULTS

The stakeholders participating to the phase of exploitation have been interviewed also about the problem of sustainability of the Docent outputs in term of estimated cost for a future implementation.

It is important to understand which can be the cost for a future adoption of Docent result in order to evaluate the financial impact they can have on an institution that might decide to implement them.

Also regard this point, the approach it is different in the European countries.

In UK for example most or all of the material covered by the learning units is already offered as training or support for UK PhDs therefore only little extra cost would be involved; however, UK universities are more likely to be looking to save on costs in this area. Because of this, shared materials are welcomed as they can save on development and testing costs.

About the career service most careers advisory services 'do the observatory stuff'. All UK institutions have such a service already but the amount of support that's specifically dedicated or tailored to PhDs varies.





However new input of resources/time would be needed to work on a more joined-up approach to researcher development across university functions (still needed in some universities).

In other countries such as Spain and Italy it emerged that given the variance in 'cost' (e.g. hiring a tutor, career service counselors and also time away from research) and resource availability, the costs are quite difficult to identify, as the number of interested PhD holders (target users) and industries can be quite different, according to the different universities and regions and also to the level and quality of services offered. Probably in some situations it would make sense to identify some services that could be centralized for more than one institution, in order to optimize resources.

In general using single LUs is likely to be affordable through funds related to PhD programmes. Delivering careers services is likely to be more difficult.

it is important to use pre-existing resources in Universities, business organizations, business schools and employment services to implement the learning units and the Career Service. Making use of existing knowledge, staff and facilities etc would work and that investing in training of existing personnel would be worthwhile.

There is the need to establish synergies between institutions to allow the Career Service to minimize implementation costs. This could be solved by means of creating an intermediate institution that could transfer the problems found in industry to Universities for them to be solved in PhD theses.

With regard to the idea of an Observatory on trends in economic sectors likely to generate jobs for PhDs is challenging but far too expensive and somehow "risky" (and multiplying such services in different regions would make no sense). However a more limited analysis of the trends, based on existing studies and surveys and a regular consultation of careers offers in main international databases of job offers could be a more affordable objective (and should be further developed as a common tool for all services).

It is however very important that PhD holders know more about the (best) professional and career approaches in industry, identifying best cases also in the private sector where research careers can be rewarding experiences.

It is important to operate in a very efficient and networked manner to ensure that the institutions that will create the Career Service in different countries are able to share information and/or expertise.



Certain other programmes also work towards the aims set out by Docent Project. It is necessary to strive to not duplicate the efforts and to integrate these programmes within the specific actions provided by the Career Service and vice versa. This will cut down the implementation costs of the Docent Project's deliverables.

A different case, which can also affect the Career Service, are the actions implemented by the Marie Curie institution: they offer a wide range of training possibility and have boosted cross-border mobility, career development and research collaboration for many thousands of researchers. Industry-Academia pathways and partnerships are stimulating inter-sectoral mobility and knowledge exchange.

It is essential to generate a PhD database broken down by specialties. The European Commission has an expert database that assesses projects on a European level. A similar database would be required, and should be made directly available to private companies looking to employ a PhD. In this sense, it is essential to bridge this gap using pre-existing projects to reduce efforts and costs

However, in calculating the cost associated with the adoption of the Docent products, it has been recommend to be taken into consideration the following preliminary questions:

- (1) Who will plan and implement such a programme? Existing programmes are often implemented by the graduate schools, but resources are often unavailable for these activities in the university budget.
- (2) How will doctoral candidates be motivated to attend such a programme? Would it be voluntary participation or compulsory? Given the demands of doctoral degree (i.e. timely completion, publication, teaching obligations, dissemination and networking), there is strongly caution against making these learning units compulsory without clear indications of the results to be achieved (to future employers and evidenced in certification/qualification form).

As general result of this analysis all experts involved agree that the Docent products and results could be adopted if considerations are taken for the issues raised.

Docent results could be adopted at the European level since several of its objectives fully aligned with the Europe 2020 strategy. In the next decade, Europe will face a shortage of human capital in research and innovation. If the EU wants to maintain its global competitiveness and innovation capacities, it is crucial that it trains the next generation of researchers with the adequate skills. Indeed, the project contributes to two of Europe 2020 flagship initiatives: "Innovation Union" and "An agenda for new skills and jobs", as it address



the issue of high quality doctoral training, employability and professional career development opportunities towards a wider employment market.

There is a huge need to improve the occupation skills and competences of PhDs. They need support in valorizing their knowledge and guidance services for a successful career not only in the public (academic) sector but mainly in the private. And, the business economy considers often their profiles too high and too theoretical. So, thanks the collaboration with enterprise that EU Universities are going to implement more and more, following also new trends in the academic world due to reforms that affected the education systems in Europe, they could increase the relation with enterprises and receive more income and benefits as in the past.

The LUs materials will be especially useful in raising awareness and for the more general topics – self-awareness, career planning, career management.

The Career Service can work excellently on a European level, on the condition that the local environment it is developed in is also considered. It should be further explored and compared with real situations and contexts at universities, i.e. more adapted to organizational needs (in some cases priority could be given to some specific aspects and not to all aspects).

The model must be very close to private enterprises: there is a gap between Universities and the market. Companies are the major drivers in bridging the gap between research results and innovation. A transparent process for priority setting which is in line with future market demands has to be implemented. Innovation also means removing barriers that prevent ideas from getting into the market, closing the link between research activities and the commercial exploitation of innovative products and services based on research outcomes.

New simplified, user-friendly and inclusive regulations frameworks, standards setting and IPRs protection and exploitation modalities will encourage more private sector investment and facilitate the exploitation of research results by the business sector.

Consequently, the Career Service needs close ties with industry, especially with SMEs. Organisations that link academia and business, can implement these pilot actions to prove the objectives at hand. This is an example of how we can act local and think global.

These unique actions can provide mid-term results that can increase the level of innovation in companies.

We should not limit the actions exclusively to technical fields, since advances can also be made in terms of legislation and economy: companies encounter legal inconveniences when acting on a European level, such as the European patent, which does not exist as such.



The Learning Units are easily applicable and respond to genuine business demands, but they need to be included within specific PhD courses, at the onset, and should have a very practical nature (case method) and skills should be taught to enhance knowledge. They should be underpinned by a business mentor and should involve internships to encourage mobility (even on an international level).

The Career Service has also proven to be instrumental to help Doctoral graduates to focus their career path towards business. If they decide on that career path from the start, they will be able to access a host of related activities (connections with business, internships in companies, business jargon, transferable skills,...).

## 6. GUIDELINES FOR THE ADOPTION OF DOCENT RESULTS

As final result of the involvement of stakeholders at European and national level they have been collected several suggestions and recommendations concerning the Docent Project results, from the point of view of contents, of dissemination and from strategic point of view.

Specific recommendations on how to improve the dissemination and applicability of the Docent products have been:

- (1) It is mentioned in the final page of the Training Paths document that learning units can be provided upon request; this information should be made more visible on the web page. Information can also be provided regarding dissemination strategy.
- (2) Indicative teaching plans could be included in the Training Paths modules. This would be especially useful given that there is great variety of different learning units on offer.
- (3) In module 3, a statement on multiculturalism and a sense for diversity is useful in the section on conflict management. It should be noted that conflict management is a new area of graduate studies and, thus, should warrant further consideration.
- (4) Subsection creativity of module 5 is an area where clearly the arts and humanities are highly relevant. Therefore, it is extremely important to be more inclusive of these disciplines during implementation and consultation concerning the design of the learning units.

From a strategic point of view:

- it has been noted the link to Marie Curie initiatives. In the three different Marie Curie implementation modes dedicated to the training of early-stage researchers – Initial Training Network (ITN), European Industrial Doctorate (EID) and Innovative Doctoral Programme (IDP) - the training offered should not only focus on research knowledge but also be completed with modules on transferable skills such as entrepreneurship, business



management, financing of research projects, standardisation, communication etc. Both the quality and quantity of supervision of the early-stage researchers are also important evaluation criteria. Despite their high level of education, PhD candidates sometimes face difficulties finding a position following their graduation as their skills do not always match employers' needs. By intensifying the collaboration with businesses during the PhD training, the EID, ITN and the IDP will significantly broaden the employment perspectives of PhD candidates.

- It has been suggested
  1. A preliminary analysis of the territorial context that will provide information on the programmes implemented by the Public Administration that may be integrated in the Career Service (e.g. labour intermediation).
  2. the strong involvement of many stakeholders outside academia. Be sure to include SMEs as a significant number are interested in employing PhDs
  3. Continuity for researchers. Follow up awareness-raising training with mentoring scheme to support individuals to apply what they learn.
  4. To expand for humanities PhDs.
  5. To seek outside funding to finance careers services etc, including industrial sources. The business world should start to consider that providing this type of services can generate expenses. The Career Service will perform a host of services, and part of the expense should be financed by companies looking to hire Doctoral graduates.
  6. To further explore the possibility of resources at regional level should be explored. Also, synergies could be identified and explored with local services for employment and with already existing services and tools (i.e. "EURAXESS Researchers in motion", the EU Researchers' mobility Portal, which displays also research positions and job offers in nearly 40 countries)
  7. Promote with the aim to create national trends (e.g. to provide careers services). Advertising and promoting is essential. At a national level: it is useful to create a national "trend" so that the greatest number of universities and research bodies are encouraged to develop their career services. Also,
  8. To share practices. Good practices at a national or local level could be shared and updated continuously.

## 7. CONCLUSION



The involvement of stakeholders in the process of exploitation as well as the results shown in this study gave the opportunity to give continuity to the debate on the project.

Thanks the Project exploitation phase different stakeholders have been involved on the Docent project issues and had the opportunity to know in depth the project outcomes speaking about it. Many of them expressed interest and a desire to be kept informed about the project. Thanks the link build in this phase with networks and local/national/European stakeholders the docent partnership has created a network very interested to carry on in different ways the debate on the transferable skills and the career development for PhDs.

As an example one at European level the Eurodoc network could support the dissemination of the of the DOCENT Project results through its own networks and following its protocols

Euroguidance could have a facilitator role in multiplication of the products/results in other policy makers, decision makers, research and end-users contexts as well as a promotional role in the national and EU legislation/regulation for lifelong learning and guidance, lobbying the need for more attention to guidance for PhDs.

The Marie Curie Fellows Association shown its availability to spread awareness of the DOCENT products/results among Fellows and/or among institutions hosting Marie Curie Fellows or networks such as the ITN networks. It proposed to present the DOCENT outputs to Fellows during future workshops on soft skills. Furthermore, awareness can be raised via the IT tools.

Many others organization also at local and national level in different countries expressed their interest in the Project results showing their enthusiasm to exploit and disseminate them in institutional, economic and social spheres.





