A European employment market for researchers: challenges and achievements

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The broad policy context

Europe needs more research and more researchers. This perception arose as a consequence of three major political developments:

1. the launch of the European Research Area (ERA) in January 2000, which, for the first time, provides a general framework for the designing of an overall ambition for European research;
2. the commitment by the Heads of State and Government in Lisbon, in March 2000, to make “Europe the most dynamic and competitive knowledge economy in the world by 2010”, best known as the ‘Lisbon strategy’;
3. the commitment taken, at the European Council in Barcelona (March 2002), to raise investment in research in the European Union (EU) to an average of 3% of the Member States’ GDP (Gross Domestic Product), two-thirds of which is to originate from the private sector.

In 2005, at almost halfway through the 10 year period set for these ambitions, most indications showed that the ‘Lisbon strategy’ was faltering. Growth had stagnated, unemployment was rising, and the gap between our traditional trading partners persisted, while the more vigorous emerging economies, such as China and India, were catching up fast.

In March 2005, the European Council endorsed the European Commission’s proposals to reinvigorate and refocus the ‘Lisbon strategy’, and to strengthen Member States’ commitment to it. Its central focus is now on establishing a strong partnership for jobs and growth between the EU, Member States and all participants, including the business sector. Three areas for joint action have been singled out:

1. making Europe a more attractive place to invest and work in;
2. leveraging knowledge and innovation for growth;
3. job creation.

For the first time, there is a coherent approach to building a Europe of knowledge. The ‘Lisbon strategy’ is all about building on what Europe can and should do best, by providing excellent education, fostering excellent research and making room for creativity and innovation.

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There is an overwhelming need in Europe to stimulate growth and productivity, and also to strengthen social cohesion. The best way to achieve this is by placing the emphasis on knowledge and innovation, and by making the best of the human capital.

Research must be the main engine. Studies have shown that each extra percent spent on public R&D (research and development) leads to an extra 0.17% growth in productivity. What’s more, each Euro of public R&D funding given to business leads to additional business investment of between 70 and 90 Euro-cents. In the long term, research also leads to more and better jobs, particularly in those sectors of the economy that recruit highly-skilled people, with salaries to match. This shows that public spending on R&D represents not a cost, but the best possible investment in Europe’s future.

But, what is the situation as regards research investment in Europe? In 2005, the latest facts and figures for science, technology and innovation, which were published by the European Commission, do not present a positive picture, showing that R&D investment in the EU is stagnating. If current trends are allowed to continue, by 2010, Europe will have arrived at a figure of only 2.2% of GDP, compared with the 3% set out by the ‘Lisbon strategy’. At the same time, research intensity in China is currently growing at a rate of 10% or more per year. If this trend continues, China will, by 2010, devote at least the same share of its wealth to R&D as the EU-25 (referring to the current 25 EU Member States). In other words: China is catching up with Europe, while Europe is not catching up with Japan and the USA. Furthermore, business funding of R&D in Europe has decreased since the year 2000. In 2002, it stood at only 55.9% of domestic R&D investment, compared with 63% in the USA and 74% in Japan.

Each of these commitments has clear implications on human resources in research. Abundant and highly trained researchers are not only necessary to advance science and to underpin innovation, but are also important in attracting and sustaining investments in research by public and private entities. Concurrently, the European Commission has estimated that the fulfilment of the 3% objective alone would require a further 600 000 to 700 000 researchers, in addition to the resources needed to replace rapidly the aging workforce in European research.

Fulfilling Europe’s ambitious policy objectives cannot be achieved without a broad and integrated strategy involving all stakeholders concerned, and taking stock of the changing environment in which research is pursued. Against the background of growing competition at world level, the EU’s strategy regarding human resources in R&D has concentrated on making Europe more attractive to the best researchers. This is done by stimulating young people to enter into the research profession, by encouraging European researchers to stay in Europe and by attracting researchers from the entire world to Europe.

The ultimate aim of this strategy is to develop an open trans-European labour market for researchers with attractive career prospects, supporting a beneficial ‘brain circulation’, thereby limiting ‘brain drain’ (see Chapter 6 by Bernd Wächtler) both within Europe and in a global setting.

Without this, Europe will not be able to secure and expand its role in science, technology and innovation. Although more researchers are educated in Europe than in the USA and Japan, today’s employment levels show researchers account for six in every

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2Key Figures 2005 on Science, Technology and Innovation: Towards a European Knowledge Area.

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1000 members of the workforce, which means that Europe actually employs fewer than
the USA and Japan, where the figures are nine and ten per thousand, respectively.³

Apart from the unsatisfactory level of research investment in Europe, at
least two factors can additionally explain this situation:

1. many university graduates consider it more interesting to work in a business
environment rather than in research; and
2. there is a strong tendency for researchers to move abroad, in particular to the
USA, coupled with a reluctance to return to Europe, often due to the absence
of appealing research and career opportunities.

Ways need to be found, and pursued, at all levels — at the level of the
European Commission, EU Member States and regions, as well as at the level of
enterprises, universities and research organizations — to strengthen Europe’s human
potential in R&D, and to make Europe more (globally) attractive to researchers.

**Strategies for improving human resources in R&D**

There are potentially four major paths that can be followed as part of the broad
and integrated European strategy for action on human resources in research, of
which the ultimate aim is to create an open and competitive European labour
market for researchers:

1. by improving the overall environment for researchers in Europe by enhancing
mobility and removing obstacles;
2. by increasing the European career perspectives for researchers and the attrac
tiveness of a career in research;
3. by enhancing public recognition of the researchers’ roles and contributions to
society and to citizens’ welfare; and
4. by providing more and systematic financial investments in researchers’
training, mobility and career development.

**Improving the overall environment for researchers in Europe by
enhancing mobility and removing obstacles**

In 2001, the European Commission suggested, in its communication *A Mobility
Strategy for the ERA⁴*, a first step towards the human resource objectives is the
requirement for specific actions promoting enhanced mobility of researchers as a
tool for further training and transfer of knowledge. Published in 2003, the European
Commission communication *Researchers in the European Research Area: one
profession, multiple careers⁵* made “mobility a central plank in the wider context of
researchers’ careers and suggested a series of measures towards a genuine European
labour market for researchers”.

The implementation of the suggested measures is an ongoing process based
on close co-operation between the participating countries through the Steering Group
on Human Resources and Mobility as part of the Open Method of Co-ordination.

³Key Figures 2005 on Science, Technology and Innovation: Towards a European Knowledge Area.
So far, we have seen the successful introduction of the ERA-MORE network (network for mobile researchers in the European Research Area), with 200 mobility centres throughout Europe providing researchers and their families with essential and practical information needed to make their mobility experience a success. Within the same framework, European — and 29 connected national — Researchers’ Mobility Portals have been set-up to help researchers to identify training and job opportunities throughout Europe. These portals are effectively on-line job markets, with hundreds of available job vacancies for researchers, and the possibility for universities, research organizations and industries to directly publish their job vacancies for free.

Re-iterated political mandates have been given to the European Commission to take any appropriate action to facilitate the entry of third-country (third countries are defined as all countries inside and outside Europe, which are neither EU members nor associated to the Research Framework Programme) researchers to the EU, which is one of the key actions in use to set-up and develop a more favourable environment for mobile researchers. On the 16 March 2004, in response to preparatory work based on examples of good practice at national levels, the European Commission issued a package of tools relating to the admission of third-country researchers, which comprised of a proposal for a directive and two recommendations.

The directive provides a fast track procedure for the ‘admission’ (entry to the EU for periods greater than three months) of researchers from non-EU countries. The main concept is to create a specific residence permit for these researchers. Accredited research organizations will have to certify the status of the researchers in a so called ‘hosting agreement’, which will acknowledge the existence of a valid research project, and certify that the researcher has the necessary scientific skills and competencies, financial means and health insurance. Upon fulfilment of the conditions of the hosting agreement, the migration authorities of the host country will rapidly issue the residence permit to the researcher. Once a residence permit is granted, the researcher will be free to move within Europe for the purpose of the scientific project.

The first recommendation, which also concerns admission to the EU, invites the Member States to accelerate, on a voluntary basis, the implementation of the directive, and also includes rules on the exemption/acceleration of the procedures to issue work permits for researchers and the easing of procedures for the issuing of stay permits (temporary residence permits). It also covers supplementary issues such as family reunification and the co-operation between the operations of the Member States and the European Commission. The second recommendation, which focuses on short-term visas (entry to the EU for less than three months), is based on the consideration of researchers as bona fide travellers for whom it is suitable to facilitate a uniform format for the issue of visas, which is necessary, for instance, to allow the participation in conferences, seminars etc.

\(^6\)For more information on the location of these centres: http://europa.eu.int/eracareers
\(^7\)http://europa.eu.int/eracareers
\(^8\)Communication from the European Commission to the Council and the European Parliament “on the presentation of a proposal for a directive and two proposals for recommendations on the admission of third-country nationals to carry out scientific research in the European community” COM(2004) 178 final of 16.3.2004, applicable to Schengen countries and Ireland (which “opted in”, while the United Kingdom and Denmark will not participate).
This instruction concerns the rapid issuing of short-term visas (including multiple visas), the adoption of a harmonized approach to the supporting documents of visa applications, and the reinforcement of consular co-operation.

Adoption of this package took place in autumn 2005 and it was published in the Official Journal\(^9\) so that it became part of the EU *acquis*. Consequently, the two recommendations will immediately enter into force, while the Member States will have 2 years to implement the directive, that is, to transport it into national law. In addition to its institutional tasks relating to the monitoring of the implementation of the three instruments by the Member States, the European Commission will be acting both by itself and in support of national efforts to promote awareness-raising information and training initiatives concerning the impact of the three instruments on national legislation and administrative procedures.

**Enhancing the European career perspectives for researchers and the attractiveness of a career in research**

In March 2005, as an important measure to help attain this objective, the European Commission adopted the Recommendation on the European Charter for Researchers and the Code of Conduct for their Recruitment\(^10\). The Charter and Code are the fruit of a broad consultation among stakeholders throughout Europe. They are key elements in the EU’s policy to make research an attractive career, which is a vital feature of its strategy to stimulate economic and employment growth.

The European Charter for Researchers addresses the roles, responsibilities and entitlements of researchers and their employers or funding organizations. It aims at ensuring that the relationship between these parties contributes to successful performances in the generation, transfer and sharing of knowledge, and to the career development of researchers. The Code of Conduct for the Recruitment of Researchers aims to improve recruitment, to make selection procedures fairer and more transparent, and proposes different means of judging merit. Merit should not just be measured on the number of publications a researcher produces, but also on a wider range of evaluation criteria and abilities, such as teaching, supervision, teamwork, knowledge transfer, management and public awareness activities.

The principles laid down in these documents give individual researchers the same rights and obligations wherever they may work throughout the EU. This should help counter the fact that research careers in Europe are fragmented at local, regional, national or sectoral levels, and allow Europe to make the most of its scientific potential. The Charter and the Code of Conduct contribute to this objective by addressing Member States, employers, funding organizations and researchers at all career stages. They cover all fields of research in the public and private sectors, irrespective of the nature of the appointment or employment, the legal status of the employer or the type of organization or establishment where the work is carried out.

Practical implementation of these changes lies with the employers, funding bodies and the researchers themselves. The next crucial step is the application of the Charter and the Code, which indeed constitutes a challenge for further work. In close co-operation with the Member States, it must be ensured


\(^10\)C(2005)576 final of 11 March 2005
that both instruments will actually become an authoritative reference point for all those who are responsible for developing, enhancing and maintaining a supportive working environment and culture for research, and for the researchers themselves. This does not, and cannot, solely depend on the European Commission. It depends on the readiness and commitment of the Member States, the funding bodies, the research organizations and of the researchers themselves, to carry this strategy forward, and to transpose the principles of the Charter and Code into the national, sectoral and institutional contexts.

In order to optimize research quality and efficiency, it is the responsibility of funding bodies and employers, which includes the universities, to create open and attractive working and employment conditions for researchers, based on regular quality assessments and transparent promotion systems. Staff evaluation/appraisal systems should also reward efforts that lead to greater efficiency and better management of research, and should give credit to the non-academic activities that are performed by teaching and research staff.

Any human resource strategy should acknowledge the efforts of those who are most successful at linking excellence in research and teaching to the non-academic world through fund raising, patenting, establishing external collaborations, management activities etc. Inter-sectoral career paths should not be discriminated against, instead they should be encouraged through staff evaluation and promotion, since they have a positive impact on research productivity. Strategies for recruiting and retaining researchers must promote the presence of a stimulating research environment that will, inter alia, allow researchers to enrich their own professional portfolios, which will in turn broaden their career prospects. This is what the application of the Charter and the Code entails.

So far, the signs are very positive. Immediately after the adoption of the Recommendations, major efforts were undertaken by the European Commission, the Member States and the research organizations to open up a debate on the impact of the Recommendations on national and institutional principles, codes and legal rules concerning researchers’ career paths. In a relatively short period of time, this exercise gave important results.

Those who have committed themselves to adopt the Code and Charter, or who have already done so are published on the apposite website\textsuperscript{11} and include:

1. the Rectors Conference of Italian Universities (CRUI);  
2. the Rectors Conference of the Swiss Universities;  
3. the Rectors Conference of the French Universities;  
4. the Rectors Conference of Slovak Universities;  
5. the Rectors Conference of German Universities, and;  
6. the Italian National Research Council (CNR);  
7. the Lithuanian Government adopted a resolution and integrated the provisions of the Charter and Code into the modus operandi of all public sector research and educational establishments;  
8. the ENEA (Italian National Agency for New Technologies, Energy and the Environment), which signed the declaration of commitment together with all the other main Italian Research Institutes; and

\textsuperscript{11}\textsuperscript{More detailed information about signatories of the Charter/Code and all the language versions to download can be found on: http://europa.eu.int/eracareers/europeancharter}
9. CNRS and INSERM, the French National Centre for Health and Medical Research.

The same website also provides a mechanism where interested researchers, research organizations and anyone in charge of managing human resources is invited to voice their comments.

This initiative and its uptake by research organizations is extremely promising for a tangible improvement of the working environment for researchers in Europe. However, this is not enough. In conjunction with the Charter and Code we need to enhance public recognition of the researchers’ role and contribution to society and to citizens’ welfare, thus attracting more young people to enter the researcher profession.

Promoting ‘researchers’ to the public: giving a face to European research through the Researchers in Europe initiative

Scientists and researchers are generally respected for their work. However, they still have a mixed image in the popular mind; many people still think of them almost as aliens, living in another dimension. Then there are the perceptions of the mad and evil scientist who lives in horror fiction and comic books or the eccentric grey-haired introvert who lives in a lab, who as a ‘bookish nerd’ knows the ins and outs of quantum theory, but is baffled by social practice.

It’s on the basis of these observations, confirmed by several European surveys, that the European Commission decided to launch an awareness campaign entitled ‘Researchers in Europe 2005’, lasting from June through to November 2005.

The main aim of such a campaign was to increase public recognition of the research profession and the roles researchers play in society, not only through underlining the importance of their impact on citizens’ daily lives, but also by demonstrating that researchers are ‘ordinary people’, who face similar problems, share similar passions, raise families etc. in the same way as every man or woman in Europe.

In this context, many different events have been organized at European, national and regional levels. On 8 June 2005, the initiative was officially launched at the European level. To mark this occasion, an event was staged in the Luxembourg National Museum for Natural History, where a lot of hands-on experiments were organized. Children from schools across Luxembourg and the neighbouring countries were invited to participate alongside representatives from both public and private research circles from all over Europe. The highlight of the initiative was the European Researchers’ night, on 23 September in Brussels. It embraced a whole range of exciting events, which were co-organized by the European Commission in conjunction with the Brussels Planetarium, the Belgian National Museum of Natural History, and the Free University of Brussels. Interactive experiments were organized with the assistance of experienced researchers, which included demonstrations of the world’s most advanced humanoid robot, ASIMO (Advanced Step in Innovative Mobility), and visits were permitted to labs that are not normally open to the public. During the same night, 37 other ‘Researchers’ nights’ were held in 15 European countries, with each offering a unique opportunity to the public at large to directly get in touch with researchers,
in a festive and relaxed atmosphere, thanks to the very broad range of creative activities that were offered.

In Dublin, on 2 December, the closing event of the initiative took place, which allowed for a large exchange of information and experiences by the events organizers, leading to some new networking amongst them.

At the national, regional, local and in some cases transnational levels, 29 projects, which were deemed to be contributing to the achievement of the initiative’s goal, were selected from a call for proposals launched in 2004, and benefited from an EU co-funding. These projects covered 18 European countries and involved about 145 different operators, from universities to research institutes and organizations, both public and private, not to forget associations, public authorities and foundations. Furthermore, 32 events such as ‘science weeks’, ‘science festivals’ or ‘Einstein years’, covering 27 different countries, dedicated a part of their 2005 activities to the initiative’s objectives. The global result of the initiative has been very satisfactory, with all the organizers involved stating their intentions to carry on staging the types of events that address the public at large. For all kind of events, and in particular for the Researchers’ nights, the organizers stated that the results, especially regarding the number and enthusiasm of the audience, were beyond their most optimistic expectations.

Given this positive assessment, and the necessity of pursuing the efforts in tackling the ‘old stereotypes’ concerning researchers, the European Commission will again launch in 2006 a call for proposals regarding the organization of ‘Researchers’ nights’, based on the same concepts that applied in 2005. This could include the organization of festive events on Friday nights, which are likely to attract the public at large, and especially young people, therefore allowing both public and researchers to ‘have fun’ together in such a way that brings researchers closer to the people. This will help to break the myth of the isolated, mad, mysterious or even dangerous scientist, who completely ignores reality and is indifferent to what makes up ordinary people’s lives. The formula of the ‘Researchers’ night’ has been chosen as presenting the highest ‘investment/benefit’ ratio in pursuit of the objective of making the public and in particular young people aware of the ‘researchers’ reality’ and of the fascinating aspects of this job.

Providing more and systematic financial investments in researchers’ training, mobility and career development

The fourth path towards the development of a genuine European labour market for researchers leads back to the European Commission’s proposal for the Seventh Framework Programme (FP7), which outlines the need for considerable and systematic financial investments in researchers’ training, mobility and career development. The ‘People Programme’ for FP7, with a proposed budget of € 6.3 billion over 7 years, provides for this, building on the successful experiences of the Marie Curie Actions to date.

The Marie Curie Actions have a long history. They have in fact developed significantly in orientation over time, from a fellowship programme based purely on mobility to a programme dedicated to stimulating researchers’ career development. The Marie Curie Actions have been particularly successful in responding to the training, mobility and career development needs of the scientific
community. This has been demonstrated by a significant and at the same time worrying oversubscription in the current Framework Programme.

The People Programme proposal for the FP7 builds on this legacy, and puts forward a coherent set of Actions. While the proposal offers a considerable degree of continuity, it is, more than ever, focused on the overall structuring throughout Europe of research training and researchers’ career development by promoting transnational and intersectoral mobility in all types of research, including in an industrial setting.

The ‘bottom-up’ character of the Marie Curie Actions will be preserved; however, there are some innovations in all this. These ‘Actions’ will ensure that, compared with previously, a much stronger orientation will be directed towards training and career development, both for and in, different sectors, in particular the private sector. This can only be realized by an emphasis on the development of complementary skills and competences, which are crucial for the better orientation and functioning of research in an enterprise setting. For the Actions, this will involve stimulating intersectoral experiences through active participation of industry, and by putting in place a dedicated scheme for knowledge-sharing through partnerships between academia and industry, in particular SMEs (small and medium-sized enterprises).

While the aim of strengthening their structure is built into the Actions, the introduction of co-funding of regional, national and international programmes in the action line, which addresses experienced individual researchers, is predominantly to gain new and greater impact of the Community (Marie Curie) Actions. The individual fellowships of the Marie Curie Actions, as implemented until now at Community level, seem to have reached a stage of maturity in Europe. At the same time the national programmes — predominantly research training programmes run by organizations at the regional or national level — remain fragmented in terms of objectives, evaluation methods and working conditions, and are restricted as regards their international or European dimension. New impact would be gained therefore if the Community Actions had a stronger leverage effect on regional, national or international programmes. It is therefore intended, on the basis of open calls for proposals, to co-fund a selection of those programmes corresponding to the FP7 objectives. Evaluation and selection of the fellows will be based on merit, without limitations regarding the origin of the applicant, and will apply acceptable employment and working conditions (in terms of e.g. salary, social security, mentoring and professional development). The ‘co-funding’ mode would not replace the existing manner by which individual post-doc fellowships are applied for and awarded at the European level, which is currently exclusively in practice. Both implementation modes would co-exist and during the course of FP7 there would be an evaluation-moment on how to proceed with the two modes.

Another element is the reinforcement of the international dimension of the ERA as a fundamental component of the EU’s human resources in R&D. Next to outgoing fellowships with a mandatory return aimed at contributing to the career development and life-long training for EU-researchers, the international cooperation through researchers from third countries is expanded considerably. In addition to a continued openness of all Marie Curie host driven Actions to third-country researchers and the continuation of incoming fellowships for knowledge enhancement and collaboration enrichment, new dimensions are introduced for
collaboration with EU neighbouring and EU S&T (Science and Technology) Agreement countries and for support of ‘scientific diasporas’ of Europeans abroad and foreign researchers within Europe.

The proposal for FP7 is currently in the process of being negotiated in the Council of the European Union and in the European Parliament and is due to enter into force in 2007. More information about this is available on the opposite website: http://europa.eu.int/comm/research/future/index_en.cfm

**Concluding remark**

If researchers are provided with a fair professional environment, good career prospects, the professional recognition they deserve and more sustainable financial means, they will embark upon a career in research, they will stay, come, or return to Europe and they will contribute to realizing a true European labour market for researchers.