EUROPEAN COMMISSION
RESEARCH DIRECTORATE-GENERAL

Directorate C - Science and society
Strategy and policy; administration and finance

Brussels, 06 April 2004
C1/(03) D/ 568721
Outcome of Stakeholders – document - 0604 final

OUTCOME OF THE STAKEHOLDERS' CONSULTATION

RESULTING FROM COM(2003)58 OF 5 FEBRUARY 2003

"THE ROLE OF UNIVERSITIES IN THE EUROPE OF KNOWLEDGE"

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2. Examples of Member State policies and practices quoted by stakeholders

Disclaimer

The views from stakeholders expressed or summarised in this document represent the views of stakeholders and are not binding on the European Commission.

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Synthesis and messages from stakeholders

SYNTHESIS

The document analyses the responses received from stakeholders during the consultation process, launched by the Communication on the "Role of Universities in the Europe of Knowledge".

As of September 2003, **more than 140 contributions** had been received from 103 organisations, one third from associations of universities, one third from individual universities, and one sixth from professional associations and unions. Twelve countries have responded. One fifth of contributions come from European organisations.

Although diverse and heterogeneous, the contributions illustrate by their quality, content, and proposals the **strong commitment of stakeholders** in helping European universities to achieve their full potential in the knowledge society.

The vast majority of stakeholders support the debate on the future of universities initiated by the Commission with its Communication on universities.
(http://europa.eu.int/comm/research/univ.html).

1. OVERALL SUPPORT AND SOME CRITICISMS

There is an overall recognition of the new context and challenges facing universities, and that this calls for reconsideration of their role, structure and financing.

Although, universities have already made considerable effort to adapt so they may better fulfil their missions, more is required.

In the long term, higher education needs to **find an optimal structure** to make it possible for universities to encompass a diversity of missions, such as education, research, innovation, governance, citizenship and regional development.

European Higher Education is characterised by a **diversity of models**, reflecting the diversity of European cultures, values and perspectives. Europe should consider this diversity of culture and values as an asset and build upon it.

Thus, the fundamental model for universities has to preserve European diversity and give priority to the interdependence between teaching and research.

Nevertheless a few respondents express **doubts** as to the feasibility of achieving the objectives. Some express **reservations** about the apparent market orientation of the Communication. There are **diverging views** about the public service model versus a more market oriented university model. This is related to the overall educational debate.

There are risks of oversimplifying the mandate ("become a first class university system", "achieve excellence") and to achieving these objectives due to the many diverse missions. In any cases, **the debate needs to be broadened**.

2. AREAS OF CONSENSUS AND DIVERGENCES

On research

- **There is broad support for the link between research and education**. The main role of universities is to provide high quality intellectual training adequate to meet the evolving needs of society. **Training high level decision-makers is critical to society and researchers**.

  Nonetheless, the UK Government White Paper supports the view that in some cases, research activities can be disconnected from teaching and performed by a more limited number of universities.

- **The vital role of fundamental research has to be emphasised**, as the source of creation of new knowledge and the source of most innovation in society. The European effort in **basic research should be strengthened** to fully exploit the capabilities of research-intensive universities.

- **A balance should be struck between fundamental research and market-oriented research**. Most of the respondents see an urgent need to ensure that there is a clear and acceptable balance between the pursuit of knowledge for its own sake, and the demands for basic research versus a tangible return to the economy and society at large. This forms part of the core debate.

- In parallel, there is increasing recognition of university **innovation-related activities**, which are not incompatible with the developments of scientific excellence in research and education.

- **Europe needs a world-leading research base**. This is most efficiently based in world class research-intensive universities, supported by effective mechanisms for **interaction between universities and industry** that are capable of exploiting research results and producing well developed research networks in which research intensive universities are major nodes.

On the university systems

- **Europe means diversity of national systems and of institutions**. This diversity is an essential characteristic of the European community of nations and at the same time provides the driving force behind the continuous pursuit of improvement on the basis of mutual competition.

  Nonetheless there are other differing views on which diversity should be preserved.

- **The Higher Education landscape is evolving**. Two approaches emerge as regards the future shape of European Higher Education institutions: the first moving towards a strong competition and differentiation between institutions, and the second more homogeneous and more cooperative.

On financing

- A large majority of stakeholders stresses the fact that there is **insufficient funding for universities**, both for research and education. They propose an increase in the proportion of public funding of research and education that goes to the universities.

  But there are **diverging views.** For some, **public funding** should remain the major source, as a guarantor of education and research independence, while **other financing sources** such as foundations are marginal.

  Others believe that States should guarantee a basic funding in the medium and long term, while universities should earn their own income for their further development. Some stakeholders think that Europe should develop a competitive funding.

- The principle of the **students contributing to the cost of their studies** is another **contentious issue**, which needs to be reconciled with democratic access.

On governance

- **Increased autonomy and improved governance** are critical conditions to universities strategic capabilities.

- Such conditions imply a redefinition of the role of national government.

On human resources

- The **attractiveness** of Europe to students and researchers depends on important issues such as improved salary levels, increased job security, and better working conditions[1].

- **More favourable conditions** are required for '**postdocs**' researchers, which are critical to research, for women and for minorities.

- **Training through research** should be integrated earlier than the third cycle in curricula to meet an increasing demand.

On industry-university co-operation and innovation

- **Closer university-industry relationships** as well as **innovation - related activities** are recognised as a third mission of universities, alongside education and research.

- With the support of an appropriate framework and favourable regulatory environment, universities can **develop such activities** without compromising scientific excellence in research.

1.1. _____

[1] COM (2003, 436 final of 18 July 2003)

On regional development

- Universities can and should play a vital role in knowledge based regional development throughout Europe.

- Universities contribute to regional development in many ways but the extent and nature of such contributions vary greatly between regions and countries.

- The development and quality of partnerships between universities, regional authorities and industry is therefore essential.

- **Europe should support interregional networks** and better funding streams to support research of regional relevance.

On the European framework

- The scale of the challenges and the stakes for Europe seem to legitimate the search for answers and action (often called by stakeholders) at a European level.

- Many community instruments such as the **FP6** and **Erasmus Mundus** are welcomed. The new instruments of the 6th Framework Programme such as **Network of Excellence** and the **Marie Curie Training Networks** are perceived as **ideal EU instruments** to promote excellence in human resources. However, still, more could be done.

- The **European coordination** and **funding policy** must strive for a favourable **framework** to **increase the effectiveness of Higher Education and Research Area,** while respecting diversity and fostering national policies and regional initiatives.

3. EUROPEAN VALUE ADDED AND WAYS FORWARD

A large majority of stakeholders call for **an increasing role for Europe** with more strategy, more coordination and more action. The scale and the nature of the challenges to be met by universities justify a coordinated approach at a European level.

The European Union should mainly act as **a catalyst for change**, mostly through an increasing **coordination** and by a **funding policy** aimed at generating a favourable framework for universities.

European coordination and funding policy should also allow a **diversity of university models** and **emphasise national policies and regional initiatives**. It should find appropriate interactions between the different approaches at European, national and regional levels.

The potential for European action is clear. Together with its regions, Europe appears to be a new area for university development.

With the **Structural Funds**, the **6th FP** is an important instrument providing orientation and support for the universities.

More should be done at European level, by **furthering EU programmes to support university research and innovation**, and by directing funding more efficiently.

More needs to be done by Member States. They need to increase and avoid cutting back their investments in education and research.

Therefore, the European Union and member States should **combine** their **contributions** towards achieving progress in academic research.

The Lisbon and Barcelona objectives as well as the **Bologna process** provide an **adequate and complementary framework** for the modernisation of higher education and research. Europe must pursue the building of a European Higher Education Area.

The European Union can create a favourable framework by **supporting national reforms**, using its resources to encourage collaboration across national boundaries, through extending general support programmes.

The European Union could establish **a systematic process for strategic consultations**. It should ensure an efficient **exchange of experiences** and **dissemination of best practices**. The European framework can encourage Member States in **expanding** their **higher education**, with **a strategic approach and promoting initiatives**. There is also a strong intrinsic value in **cross-European consortia of universities**.

There is need to **achieve concrete steps forward**. For this, thought should be given to how the **Open Method of Coordination** could adequately **add value** and **foster cooperation** between European institutions, national authorities, regions, academic bodies, universities and other public and private stakeholders.

* * *

MESSAGES FROM STAKEHOLDERS

The University research landscape of the future

Universities face an increasing range of missions: education, research, innovation, regional development. **They need to have a strategic approach**.

The university landscape is evolving and different types and networks of universities are called to play a role on the spectrum of the missions of the higher education system.

No single model will address all the current challenges for Europe. **All universities have a role to play in an evolving landscape**.

In particular, research intensive universities are the most effective means of encouraging basic world standard research.

Financing university research (and education)

A debate is needed at EU level as to how **additional resources** could be found for universities and on the level of priority to be given to higher education in public budgets.

A large majority of stakeholders estimates that there is insufficient funding for universities, both in research and education.

Some stakeholders propose that **a greater proportion of public funding of research** and education should go to universities instead of other public bodies.

One view is that **public funding** should remain a **major source**, and also guarantor of education and research independence. Other financing sources are marginal.

An **alternative view** is that the States should guarantee a basic funding in the medium and long term, while **universities should earn their own income** for their further development.

As regards the financing of education, the principle of **students contributing to the cost of their studies** is a highly contentious issue, which needs to be reconciled with democratic access.

Even if they remain a small proportion in Europe, **private donations** should be encouraged by tax regime incentives.

University governance, autonomy and management

Autonomy and **organisation**, definition of strategies and policies should be reinforced in universities to improve their strategic capabilities.

More university autonomy implies a redefinition of the government regulatory role.

To improve their strategic capabilities, universities must demonstrate **greater transparency**. This is a critical condition, which cannot be dissociated from accountability.

Europe should develop a more realistic and consistent system of **quality assessment**.

Excellence in human resources

Most of the issues put forward by different stakeholders have already been taken into account by the Communication **"Researchers in the ERA: one profession, multiple careers"**.

- The attractiveness of Europe must include the issue of **fees for students** (which is a point of debate), **improved salary levels** and increased job security for staff.

The conditions, in particular career opportunities and funding, offered to '**postdocs**' researchers are important.

To increase the presence of women, more favourable conditions are needed such as acceptance of career breaks, child care facilities, part-time work, equitable salaries. Also role models could help to attract women to science.

Similarly, career opportunities should be enhanced for **minorities** to increase the participation of these under-represented categories.

There is increasing demand for academic training and research excellence. This calls for more **training in core and employability skills**.

This can be fostered through virtual cooperation between universities, modern praxis-oriented teaching methods, e-learning, joint degrees.

Universities need to offer a high standard of training for researchers. In addition, training through research should be integrated.

Finally, there is need for **clearer legislation** about **inter-sectoral mobility between academia and industry**. Increased links could be developed between scientific studies, training in a firm or a SME and regional aspects. Mobility should be included as an essential component of curricula.

More should be done to **stimulate** effective collaborations between institutions that include **cross-disciplinary working**. Generally more acceptance should be fostered within academic circles as to the benefits of such cooperation.

The **creation of a European researchers' visa** and further development of uniform standards for career models should foster mobility.

Other initiatives might include identifying **labour market needs**, developing **indicators of excellence**, benchmarking programmes and **quality assurance**.

Excellence in university research

There is need for an **equitable geographical distribution** of universities across Europe covering a wide range of research and teaching options.

Europe should increase the number of universities which are excellent. Using funding processes, it should foster powerful research universities.

Creation of **local networks of excellence** could further embed the concept of excellence.

A prerequisite for high quality research is that universities have adequate financial resources**, long-term planning** and **professional managers**.

The Framework Programme seems to be the most effective means by which **interdisciplinary work** can be encouraged.

To develop European centres and networks of excellence, Europe could promote training and favour project management approaches.

Stricter publication policies should be enforced at European level.

Abolishing barriers to researchers and student **mobility** will help foster European centres and networks of excellence.

The new instruments of the FP6 Networks of excellence and Marie Curie Training Networks are appropriate instrument for excellence in human resources.

Industry-university co-operation and innovation

Innovation-related activities have an increasing importance for universities. In addition to teaching and research, innovation is emerging as the third mission of universities.

Closer university - industry relationships are critical for a better exploitation of publicly-funded R&D and to increase its socio-economic impact. In this respect, there are converging expectations from the universities, from industry and from public authorities.

This requires an **appropriate framework**: entrepreneurial culture, recognition of the economic relevance of R&D results generated by universities, infrastructures, skilled personnel, access to investment, awareness and basic skills among researchers regarding intellectual property and technology transfer.

Adaptation of the regulatory environment may have a strong impact on the exploitation of academic R&D results. Regarding both legal frameworks and operational practices, there is a need to create a more uniform playing field in the European Union, to increase transparency and reduce disincentives.

Promoting the exploitation of results is also a means for reinforcing the developments of scientific excellence in research and education.

University as poles of regional development

The role of universities in regional development varies greatly by region and by country.

Such a role depends on national policies and the level of activity and competence of regional government in this area.

Universities contribute in many ways to **regional development** by increasing regional competitiveness, training of human resources, supporting regional governance, enhancing the visibility of a region, transferring knowledge to the public sector, fostering innovation.

Regions have to **develop partnerships of quality** and networks of extensive collaboration between research and commercial actors.

There is a general lack of funding mechanism in Europe to support universities' engagement with regions.

There is a need to continue and expand European level **support for inter-regional networks**.

Better developed funding streams should support research of relevance to regional development needs. In particular **Structural Funds** could better support university commitment in regional development. This must not, however, reduce the quality of research that is funded.

Broadening the international perspective of European universities

This perspective is embedded in other dimensions and cannot be considered in isolation.

Foreign students, teachers and researchers are an asset in developing the quality of university research and educational environment. However, there still remain such barriers as clearance and residence permits.

Attention should be given to the "**frustrating paradox**" of European training researchers who are then making their careers in other regions of the world.

Critical conditions are research challenges, career opportunities, salaries of top professors, opportunities to raise finance, flexibility of firms to employ foreign researchers.

Remote international contacts and partnerships should be developed so as to strengthen the excellence and international competitiveness of universities.

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Synopsis of Stakeholders Comments on Research Issues

Introduction

On the 5 February 2003, the Commission adopted the Communication on the "Role of Universities in the Europe of Knowledge"[2]. The consultation process took place between February and September 2003. As of September 2003, more than 140 contributions had been received from 103 organisations, from 21 different countries.

- Twelve ministerial contributions were received: 8 Member States, 2 new Member States and 2 associated countries. 20% of the contributions came from European organisations *of stakeholders.* Statistics can be found in the annexes.

- 33% of the contributions came from associations of universities and 33% from individual universities.

- 17% of the contributions came from professional associations and unions.

- Some contributions were produced by Parliamentary Representatives.

- This document analyses the reactions from the stakeholders. The aim was to give an as accurate as possible report of the views, including the criticisms, ongoing debates and contradictions. In many cases excerpts from quotations received have been used. For each main theme raised by the Communication, responses has been summarised and analysed by the members of the University Task Force

- Overall, the contributions from the different actors addressed both education and research issues. The interest in the research issues alone justifies the production of this document.

- The quality of the contributions is good, particularly in relation to their content and exhaustiveness[3]. There are many cases and examples of practices relating to university research and innovation in the different countries, and numerous comments and innovative proposals on the role the European Research Area can play, including proposals for action.

- As defined by the Communication, 'university' (or Higher Education used as an equivalent) represents here the higher Education organisations, including for example the "Fachhochschulen", "Polytechnics" and "Grandes Écoles".

- The views expressed in this document are only the views of the stakeholders and they are not the views of the Commission.

1.1. _____

[2] COM(2003)58 of 5 February 2003
[3] Five pages per document up a maximum to 25 pages.

1. EUROPEAN RESEARCH AND EDUCATION: GENERAL MESSAGES

1.1. THE COMMUNICATION ON "UNIVERSITIES"

The Communication on the "Role of Universities in the Europe of Knowledge" launched the debate by asking the following key questions:

- How to achieve **adequate and sustainable incomes for universities**, and ensure that funds are spent most efficiently?
- How to ensure **autonomy and professionalism** in academic as well as managerial affairs?
- How to concentrate enough resources on **excellence**, and create the conditions within which universities can attain and develop excellence?
- How to make universities contribute better to local and **regional needs** and strategies?
- How to establish closer **co-operation between universities and enterprises**, to ensure better dissemination and exploitation of new knowledge in the economy and society at large?
- How to broaden the international dimension and increase **university attractiveness**?
- How to foster, through all of these areas, the coherent, compatible and competitive **European higher education area** called for by the Bologna Declaration, as well as the **European research area** set out as an objective for the Union by the Lisbon European Council, in March 2000?

Heading each section are the specific questions that triggered the debate. These were posed in the Commission's Communication. Answers in this document have been analysed alongside these issues in part two. The European dimension is addressed in part three and four.

1.2. OVERALL REACTIONS AND DEBATES RAISED BY STAKEHOLDERS

1.2.1. A high level of support

The large majority of actors welcome the initiative of the Commission which launched the debate. They support its positive approach to the many challenges that universities currently face.

Contributions reflect a **general support for the initiative of the Commission**, launched with the Communication on the role of universities in Europe of knowledge.

The majority of contributions acknowledge that increasing competition and other challenges are now forcing universities to reconsider their role, their structure and their financing.

Organisations consulted also want a formal recognition of the essential role of universities as main actors in the European Area of Higher Education and in the construction of the body of knowledge in the context of the Bologna process.

The whole of society needs more and more of the knowledge that universities and research institutions provide. Dissemination of knowledge covers the whole range of pure, applied and social science. Strengthening exchanges and cooperation between universities, research institutions and the whole of society must be supported.

The role of universities in research and science also includes the education of researchers. In developing knowledge, universities also have great impact on the education of skilled professionals during their working life.

1.2.2. The debate

The current debate is characterized by education and the various European university models.

a) Education and European universities models

European Higher Education is characterised by a diversity of models, which reflect the diversity of European perspectives on the values attached to education.

Answers refer to **several models**: the humanistic inspiration model for education and research, defended by the Conference of the Presidents of Universities; the university model adopted by UK universities; the model of the 'European Business Schools', which gives emphasis to competition in the market for students, academic talent and financing.

A deeply held commitment to European cultural diversity requires that the variety of European models has to be preserved. Europe can be inspired by American successes, without however adopting the American model.

For some respondents, universities carry the missions of public services. They exist primarily to communicate a broad knowledge base and teach students how to learn and how to acquire new knowledge by themselves. Universities also have the responsibility of training the researchers of the future, while avoiding creating a gap between the most advanced research and young researchers.

The **educational debate** remains a major concern, both for university representatives and for their ministries. The exponential growth of education and university knowledge, as well as the progress of scientific knowledge, force higher education establishments to develop links with the broader field of knowledge production. In a context of rapid reorganisation, universities are forced to constantly reform their courses and to effectively disseminate new scientific developments.

b) Missions of university

Universities assume other roles of increasing importance. Universities are foci of research and vectors of research development. They play a major role in regional and local development.

These various missions fall under **a dual heading, because research and education are inseparable.** The **Humboldian model** is still valid and has potential. There is a broad consensus that universities need **to combine research and education** and are foci of **competence in scientific and humanistic matters.** In addition, universities have to preserve theoretical research but should also invest increasingly in development and technology transfer.

As regards integrating research into teaching, **the difficulty lies in adapting research to mass university education.** The creation of a new category of teachers - researchers likely to teach in one university and carry out research in another university, as well as a mobility policy, could provide an answer.

c) Diversity

Thus the fundamental model of universities is to preserve European diversity and to give priority to the interdependence between teaching and research.

In the long term, higher education needs to find an optimum structure to make it possible for universities to encompass a diversity of missions.

The diversity of roles required of universities is no longer assumed to operate effectively within a single institution. Some respondents therefore suggest that, in view of the major diversity of the missions of the university, it is essential **to develop a university system characterised by excellence in diversity.**. This system rests on traditional values which were responsible for the success of universities, such as recognition of merit, intellectual freedom and the acquisition of knowledge.. However universities will have to concentrate on a restricted share of the spectrum of their missions and will need to develop effective collaborations.

d) University landscape

The points of consensus

- Fundamental research
- Link between research and education
- Interaction between universities and industry
- Diversity in the higher education
- Funding
- Autonomy and governance
- Attractiveness
- Development of regional and interregional networks
- European Higher Education and Research Area

In an evolving environment, one issue that arises is the development of an adequate structure to enable European universities to cope with the challenges of tomorrow. In the search for an optimum approach, several models have been proposed. These models rely on several **levels or networks of universities differentiated** according to their competencies.

1.2.3. Broad areas of consensus and divergences

There are areas of consensus and points of divergence already detailed in the synthesis:

The points of divergence

- Tangible and strategic objectives
- Need to broaden the debate
- Public versus market oriented funded research

2. HOW TO FOSTER UNIVERSITY EXCELLENCE AND RESEARCH

2.1. The University Research landscape in the future

2.1.1. Elements of context

A *high level expert group* reported in 2002 on developing **foresight for strengthening Higher Education/Research (HE/R) relations**. In 2003 a smaller expert group has further developed the initial conclusions into more detailed suggestions for action[4].

Higher Education and research relations have been considered in the context of EU-25, with an ageing population, and wide diffusion of Information and Communication Technology. The changing productive role of the HE/R system (3% of GDP) has been thoroughly analysed, as well as a set of institutional and socio-economic drivers of change.

The main issues are presented in the related document on the **High Level Expert Group on measures to improve HE/R** in order to strengthen the strategic basis of the European Research Area[5].

1.1. _____

[4] High Level Expert Group report, October 2003.
[5] supervised by the Unit Technological Prospective, Directorate of Society and Knowledge Economy

2.1.2. Research intensive universities

Most of stakeholders advocate the need to strengthen the European research effort in basic research.

Meanwhile, a successful exploitation of research based innovation is increasingly at the heart of much change within society and crucial to its economic success.

To strengthen its **basic research,** Europe must:

- **Increase funding** to improve **research infrastructure** and **project funding**;
- **Help universities** to develop greater **strategic flexibility**;
- Ensure that **funding is competitive**;
- **Develop a cohort of excellent and ambitious young researchers** and ensure that they are placed in intellectually challenging and well supported centres.

The **research intensive capacity of industry**, able to exploit efficiently the research base, is best strengthened by **legislative, economic and fiscal policies** and by the **stimulation of research based entrepreneurship.**

The contributions develop the concept of **research intensive universities**.

Diversity can no longer be efficiently addressed within a single institution. It is necessary rather to develop a university system characterised by excellence in diversity. The research intensive university is at one pole of that diversity.

The example of the USA suggests that such success depends upon highly **creative basic research,** largely **in research intensive universities**, and a profound capacity to exploit it with commercial and societal perspectives. That success is based on:

- Strong **investment** in basic research infrastructure and strong project funding;
- Strong support for the **careers of young researchers**;
- A **research culture** in private industry, commerce and the public service.

Research intensive universities are recognised as having two distinct advantages:

- **Leading edge research** underpins the education of students and the next generation of researchers;
- A **broader range of research** can be undertaken with either research institutes or industry, permitting the research effort to be pursued in an unrestricted fashion.

2.1.3. The specificities of the "European model"

One stakeholder stresses the tension between the **American model** and the **Asian model** of universities. The duality of the American system, with state universities and private universities, results in a lack of trained research workers. Meanwhile, the Asian system provides a surplus of research workers for the American universities.

Two assets mark the European position, diversity and the strong cultural tradition.

The recommended solutions to answer the challenge of the growth of high level research in universities are:

- To **train a new category of teacher-researchers**, who would teach in one university and continue their research activities in another.

- To **reinforce access to university for the largest number of students** and to **reduce the brain drain** towards the United States. For that, the principle of "**free of charges studies**" has to be maintained. Public investment (by means of taxes) has to continue to support, and further strengthen the research potential of universities.

2.1.4. Two European university models in the debate

At least two different points of views are expressed in the contributions received:

- The first puts emphasis on a strong **diversification and specialisation** of Universities, delineating universities into three groups: full research universities, universities with strategic research capacities in limited areas and universities dedicated to teaching.

- The second approach calls for a massive effort to universally raise the level of universities' missions **in training and research**, right across Europe.

The High Level Expert Group has confirmed its position as supporting the second approach as this seems more in line with European values, culture and traditions. The model from Von Humboldt is not dead. But it is useful to rethink it and adapt it to 21st Century conditions. The Group has also emphasised the importance of **co-operation within Europe in order** to create critical masses for research. The competitive approach should be addressed to foster the European position against its competitors (US, Japan).

Finally, the majority agree on the crucial importance of raising public support and finance for basic research.

2.2. IMPROVING HUMAN RESOURCES

Questions for the debate in the communication

- What steps could be taken to make scientific and technical studies and careers more attractive, and to strengthen the presence of women in research?
- How — and by whom— should the lack of career development opportunities following doctoral studies be addressed in Europe, and how could the independence of researchers in carrying out their tasks be fostered? What efforts could universities make in this regard, taking particular account of the needs of Europe as a whole?
- What ways are there of helping European universities to gain access to a pool of resources (students, teachers and researchers) having a European dimension, by removing obstacles to mobility?

2.2.1. Elements of context

It seems that **most of the issues** which were put forward by the different stakeholders who provided us with input were **already taken into account** in the drafting of the **Communication "Researchers in the ERA: one profession, multiple careers**"[6]. On this theme, a Council resolution has been adopted on 10 November 2003.

Quite a number of the stakeholders who responded to the "University Communication consultation" also participated to the "pre-consultation" exercise for the drafting of the Communication on the careers of researchers.

It is reassuring to find identical comments, as this is a clear sign that the Communication on the careers of researchers had already taken account of the concerns put forward by the different stakeholders.

2.2.2. Attractiveness for careers in R&D

A good public relations and promotion programme could enhance the image researchers have in society. In addition, better advice on scientific careers is needed at undergraduate level.

The issue of lack of career development opportunities needs to be addressed by the providers of funds. University managers should recognise that research normally requires teamwork and that post-docs, who may have the best perspective on where real innovation is taking place, should be allowed to exercise their judgement rather than be slavishly bound to the will of their research director. In addition, mentoring should be promoted.

The **Attractiveness of Europe** must include the absence of fees for students, improved salary levels and increased job security for staff. **Pay, working conditions, language and continuity of employment** are in fact the **most important** issues for improving the attractiveness of scientific careers and avoiding a "**brain drain**".

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[6] COM(2003) 436 final of 18 July 2003.

The provision of **high quality doctoral and postdoctoral training across Europe** is an important element for the attractiveness of the European Higher Education Area.

The "postdocs" issue needs to be related to different disciplines. One way to overcome the problem could be to give specific incentives to enterprises to engage "postdocs", with for example, appropriate fiscal measures. With this in mind, the **creation at European level of a foundation** to support **"post-doc" researchers** with **private funds** has been suggested..

Advisory capacities and co-operation with the business community should be enhanced to optimise final career selections in order to benefit students, companies and business life in general.

The legal status of researchers differs from country to country and this results in a variety of working/training conditions.

All outgoing fellowships should include an obligatory return path of return.

2.2.3. Gender Issues

To **increase the presence of women**, the acceptance of **career breaks** when considering promotion would help, as would better **child-care facilities**, or **well-integrated and fully accepted part-time work** plus facilities to maintain contact with the research base during leave periods.

An additional gender issue is **salary equity**.

Role models are needed, particularly to attract women into science studies and careers, and to change the image which these have.

There is a significant need in most European countries for **more women to take up the challenge of a career in science and technology.** This requires more Government action. A good example is provided by the **UK Government** which published in April 2003 **its "Strategy for Women in Science, Engineering and Technology"**.

2.2.4. Training

Another important task for universities is to train those who will play a role in the knowledge society. Public authorities should provide universities with sufficient funding to arrange an appropriately high standard of training for researchers.

The establishment of **modern, praxis-oriented teaching methods**, "learning by doing" and the eradication of the traditional "lecture" style of university teaching would also make a major difference.

The **demand for academic training and research excellence** is on the increase. It calls for more training in core and employability skills.

Networking within Europe and with other regions of the world is an important activity which could possibly be a fertile ground for developing joint degrees.

Training should be adapted to the needs of students, doctoral candidates and future employers: in particular, the general training culture should be better integrated with scientific culture and professionalism.

The **diffusion of entrepreneurship** in universities must answer a **feasibility issue**: how can students during their university studies and training obtain the knowledge and skills needed to become individual entrepreneurs?

Adaptation of educational requirements for studies (e.g. Masters based on 60 credits) together with harmonised degrees would enable companies to more easily compare candidates from different universities.

The **linkage between training and regional policies** should also take advantage of the territorial richness (SMEs and the business community in general).

Recognise the importance of equal treatment of human and social sciences and the necessity for this to develop at the same pace as the technical and math sciences.

2.2.5. Interdisciplinary / inter-sectoral mobility

Universities should promote inter-sectoral mobility during the third cycle. Training through research should be integrated not only during the third cycle but also much earlier: it is the best link between universities two missions (teaching/research).

There is need for clearer legislation on inter-sectoral mobility between academia and industry.

Sandwich courses which **link scientific study with training** in the company should be promoted and extended. Mobility should be integrated into curricula as a requirement.

Acceptance should be fostered within academic circles **of the benefits of interdisciplinary co-operation.** Career models that honour interdisciplinary activities should be promoted.

Student demands for new combinations of subjects and the opportunity to pursue broader based programmes could be influential in encouraging subject groups to work together on curricula development.

Promote a more positive **image** of people who change their career from pure science to business or policy.

More should be done to **stimulate effective collaboration between institutions that engage in cross-disciplinary working.** Obstacles to inter-disciplinary working in research assessment and funding systems need to be eliminated.

Funding streams specifically designed to address interdisciplinary challenges, such as the **Framework Programme** seem to be the **most effective** means by which interdisciplinary work can be encouraged.

2.2.6. The Bologna process and the ERA

What Bologna really represents is the **unique opportunity** to carry out a large-scale and fundamental quality upgrade.

The Conference of European ministers responsible for Higher Education in Berlin has given due consideration to the "research" role of universities.

There is need for synergies between the European Research Area and the European Higher Education Area.

Recognition of diplomas and the possibility of awarding joint diplomas should be regulated at European level.

Governments need to ratify the Lisbon Recognition Convention as a tool in removing barriers to mobility.

The ECTS system should be implemented as soon as possible as a global credit accumulation system. In comparison, the United States has a proliferation of incompatible systems.

Europe is still **a long way** from achieving an integrated labour market. The creation of a **European social security system** is a prerequisite for the development of a European academic area.

2.3. Excellence in University Research

Questions for the debate in the communication

- How can the consensus be strengthened around the need to promote excellence in the universities in conditions which make it possible to combine autonomy and management efficiency?
- Is there a way of encouraging the universities to manage themselves as efficiently as possible while taking due account simultaneously of their own requirements and the legitimate expectations of society in their regard?
- What are the steps which would make it possible to encourage an interdisciplinary approach in university work, and who should take them?

2.3.1. Creating the right conditions for achieving excellence

The "new" universities will have **to rethink the best links between teaching and research activities**, keeping in mind that some types of research will be carried out with more success outside the university environment in highly specialised research centres of excellence.

There is a need for an **equitable geographical distribution** of universities across Europe offering a wide range of teaching and research options. Europe should:

- Increase the number of universities which are excellent in what they do in specific areas and not merely concentrate more resources on an increasingly limited number of institutions at the expense of the others;

- Develop **funding** processes that will allow **between 50 and 100 powerful research universities** to emerge through competitive means.

However, it is essential that such development doesn't undermine research of national excellence, as this can greatly assist regional economic development.

A **prerequisite** for high quality research is that the universities have not only **adequate financial resources** but also **long-term thinking** in their development plans.

In addition, the key to ensuring effective management of universities lies in **enhancing** a full range of professional skills to properly equip university managers and administrators. The **exchange** and **mobility** of **administrative** and **service personnel** between universities in different countries could be fostered to this end.

Excellent performance could be honoured as well as the international activities of scientific staff.

2.3.2. Developing European centres and networks of excellence

Questions for the debate in the communication

– How can providers of university funds be encouraged to concentrate their efforts on excellence, particularly in the area of research, so as to attain a European critical mass which can remain competitive in the international league?
– How should this excellence be organised and disseminated, whilst managing the impact of the steps taken on all institutions and research teams?
– How can the European Union contribute more and better to the development and maintenance of academic excellence in Europe?

Up to now, universities have perceived **competition** as an unavoidable nuisance. They should see it as a **catalyst** of continuous **improvement**, of **entrepreneurship** and of creative and proactive decision making.

Competition to attract students will force universities to **re-evaluate** themselves and to **differentiate** what they offer in terms of quality, cost, availability, flexibility and pedagogical approach.

Virtual forms of co-operation between universities are important instruments for developing and intensifying exchanges and co-operation and putting them on a regular basis, and complement physical mobility. New e-learning programmes provide opportunities to exploit knowledge. However, virtual mobility should by no means replace geographical or inter-sectoral mobility.

Project management approaches are needed, including having **media connections** and technologies.

FP6 networks of excellence are a suitable tool to reach a critical mass in order to achieve excellence. However, the EU should concentrate not only on the Europe of knowledge but should also link it to the **Europe of skills and of citizens**. The EU could also implement and guarantee meritocracy in any fund allocation process.

One idea is to encourage, through financial support, the existence of research and meeting centres like the European University Institute in Florence.

The EU could **implement stricter publication policies** and support publishing in journals that have a greater impact factor.

2.3.3. Initiatives and good practices at national and Community level

Identifying labour market needs has great importance but so also do meeting students' needs through development of high quality university education. The Commission should help universities to create **new courses** with typically an in-built **European nature** (culture, history, languages and law).

Universities could raise the quality of graduates and train them in a way that is more relevant to society's demands. **Marketing** for education and research, through **communication campaigns** addressed to the general public, could **make scientific and technical studies and careers more attractive.**

Academic and professional needs should be the criteria for the selection of academic and administrative staff. Professorial **salaries** should be linked to **performance**, rather than civil service pay scales.

In order to **increase mobility of researchers**, **incentives systems** and other measures should be considered by the EU and the member states. **Language skills** (promoting multilingualism at all educational levels) is another major issue. In order to **recognise excellence** it is necessary to develop **suitable indicators**. The European Commission could start a **benchmarking programme,** to judge performance criteria at European universities.

Excellence also requires co-operation on **quality assurance** and a number of mobility measures which of themselves improve quality.

The EU could establish **European universities** where excellence should be promoted through the development and dissemination of good practice. They would be characterised by **strong basic research**, support for young researchers, autonomous strategic flexibility, re-configurable diversity, **strong funding** and engagement with the needs of society and industry.

The proposed **European Research Council** should be expected to have a beneficial basic research in universities.

2.4. Industry - University co-operation and innovation

– How could it be made easier for universities and researchers to set up companies to apply the results of their research and to reap the benefits?
– Is there a way of encouraging the universities and researchers to identify, manage and make best use of the commercial potential of their research?

–	What are the obstacles which today limit the realisation of this potential, whether legislative in nature or as regards intellectual property rights? How can they be overcome, particularly in countries where the university is funded almost exclusively from the public purse?

2.4.1. A strong recognition of innovation-related activities

More than 60% of the contributions received confirm how important **innovation-related activities** are for universities, alongside their core education and research functions.

Developing closer university-industry relations (co-operation and long term partnership) has been identified by most contributors as an important objective for European universities. The main goal is not financial, but the socio-economic impact resulting from the **actual exploitation of R&D results**, responding to the needs of the market and in particular in making a contribution to local development.

Apart from exploitation issues, other aspects such as **exchanges of staff** between universities and industry, or the **sponsoring of university chairs** by industry, are also mentioned.

Promoting the exploitation of academic research results – either by **technology transfer** to existing companies or through the creation of new companies (**spin-offs**) – requires several conditions:

- Developing an **entrepreneurial culture** within universities (for staff and students), including :
- Recognising the **potential value** of R&D results generated by universities, justifying their protection and possibly their exploitation (awareness activities and suitable incentives to be developed).
- Demonstrating more openness and better understanding towards industrial culture. This can be supported by exchange of personnel.
- Making available appropriate (internal or external) **infrastructures** such as technology transfer offices, incubators or science parks, and **guidance material.**
- Having **skilled personnel** in charge of the management and exploitation of knowledge and intellectual property.
- Providing access, where appropriate, to brokerage services and **investment** sources (e.g. venture capital for the creation of spin-offs).

Several contributions stress the relevance of innovation-related indicators[7], in addition to bibliometric indicators, for ranking or academic assessment purposes.

2.4.2. Good practices at national and Community level

Adaptations in the regulatory environment may have a strong impact on the exploitation of academic R&D results. As an example, the enactment of the Bayh-Dole

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[7] e.g. the number of patents per professor

Act in the USA in 1980 was one of the factors which led to a tremendous increase in the patenting/licensing activities of US universities. In a similar way, several European countries (including most notably Germany in 2002) abolished their "professors' privilege" (according to which academic researchers were allowed to personally own their results and patents), thereby empowering universities to own and exploit their intellectual property.

Another interesting example is the French "Law on innovation and research" (1999). This makes it possible for public-sector researchers to be temporarily seconded from their institution to participate in the creation of a spin-off, with an option to return to their institution, or leave it, at the end of that period.

Moreover, the **EU-funded Proton network** promotes exchanges of experience, good practices and even of staff between the technology transfer offices of European universities and public research centres.

As regards the **European Consortium of Innovative Universities** (ECIU), the main areas of collaboration are the development of university-industry links at local, regional and trans-national levels and the creation of a graduate school.

2.4.3. Scientific excellence in research, education and innovation

As far as innovation-related aspects are concerned, the conclusions of this consultation confirm those recently published in the OECD study on "Turning science into business: patenting and licensing at public research organisations"[8] as well as those contained in a study and in an expert group report conducted by DG RTD.

These reports show that promoting the exploitation of R&D results - which is broader than their mere "commercialisation" - is not incompatible with the development of scientific excellence in research and education. On the contrary, innovation, as the **third "pillar"** of universities, is able to strengthen these first two pillars.

This is clearly demonstrated by the example of the MIT (USA), which features outstanding results in the exploitation of its R&D results (license royalties, spin-offs, …), and at the same time generates an impressive number of scientific publications and Nobel prize winners.

Industry has still to find out what benefits can be derived from collaboration with academia and young scientists working in industry could be the "ambassadors" for making partnerships possible.

European examples may also be mentioned. For instance, the University of Cambridge has a remarkable track record in breaking down the barriers between science and business: since 1989, 40 companies have been formed around university research.

As an example**, teaching of entrepreneurship** has developed in some European universities: the teaching is now being coupled to Master's courses in engineering and business creating very attractive courses that will have strong impact on regional business creation.

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[8] http://www1.oecd.org/publications/e-book/9203021E.PDF

2.5. FINANCING UNIVERSITY RESEARCH

2.5.1. Public funding as the major source for funding education

The issue of funding continues to dominate the discussion in Europe. Furthermore, funding is a critical determinant for strategic autonomy of universities.

Quite significantly, the contributions often address the funding issue both for research and education.

In order to improve competitiveness, particularly in relation to the US, additional resources must be found for universities. A **debate** is needed at **European level** as to how this **additional resource** is to be found.

Nonetheless, due to the diversity of financing systems in Europe, **no single solution** can ensure sufficient long term financing for universities.

Furthermore public funding is a guarantee for a democratic education and independent research.

The contributors generally emphasise that the **primary funding** for Higher Education in Europe should come from the public budget. It relies on general taxation and hypothecated taxation, or targeting individuals as beneficiaries of Higher Education.

Some actors note that the **fundamental responsibility of the member states** is firstly to **secure sufficient financing** of institutions of higher education and secondly to **create suitable framework conditions** for raising external funds.

One group of respondents considers that **public funding** should remain **a major source** of funding in order to guarantee education and research independence. This requires a significant public financing effort, the other financing remaining marginal.

Several stakeholders support an **increase in the share of public funding directed towards research and education in universities** instead of other public bodies. Many respondents complained about the decrease in public funding.

For governments to measure and justify the necessary investment in higher education, **a debate is needed**, ideally informed by recent economic data on the relative advantages of higher Education to individuals and to society as a whole.

Despite the overall benefit of higher education spending to the economy, **governments do not always reflect this reality** by shifting their budget priority towards this sector.

Therefore more quantitative work is needed to give a clearer indication of how the benefits really are distributed in tertiary education.

A second group of respondents suggest that **the state guarantees in the medium and long term the basic funding of the universities** while universities should earn they own income.

Proponents of this approach believe that performance incentives should be an integral part of the (contractual) **agreements between state and universities**. Beyond that, each university can earn its own income, and is solely responsible for its use. As a result, an increase in private contributions would be inevitable. However, without an overhaul of

the basic conditions, and in particular tax legislation, no increase in private financing of universities by sponsors and donors will be attainable.

2.5.2. A diversified private funding for research and education

Questions for the debate in the communication

– How can adequate public funding of universities be secured, given the budgetary constraints and the need to ensure democratic access?
– How can private donations be made more attractive, particularly from a tax and legal point of view?
– How can universities be given the necessary flexibility to allow them to take greater advantage of the booming market in services?

Private financing is needed, in particular via research contracts,, but is not an alternative to public financing of research. This financing source could be increased if Member States reached the objective of increasing their research effort up to 3% of the Union GDP by 2010.

Higher Education financing can be diversified through different sources of funding (some of them are related to education):

- **Participation of the students in the cost of their studies**

There is a debate, if not a potential controversy, on the possibility of students contributing to the cost of their studies and on how this should be defined (graduate tax or and upfront tuition fee).

For some stakeholders, increasing the graduate contributions to Higher Education in a suitably hypothecated way is the quickest means of achieving a significant rise in real Higher Education funding.

As an example, the United Kingdom favours tuition fees. But the move towards fees is debated and considered by many as **undemocratic and a disincentive to greater access**. Similarly, many stakeholders support equal access.

Some respondents fear that student fees will compensate for decreasing public financing. As one contributor noted, the Australian example has demonstrated that an increase in student fees almost immediately leads to a similar reduction in public funding. The net result - financially –for universities might in fact end up being negative.

- **Private donations**

Private donations remain a very small proportion in Europe, especially compared to the USA.

Private donations should be encouraged by tax regime incentives. As an example, stimulation of funding from private enterprises could be stimulated by a tax exemption scheme with a deduction of e.g. 150% for direct investment in research activities as well

as for general donations. The **fiscal lever** is generally found to be **the most appropriate to create incentive for private donations**.

However, several respondents think that such donations will never reach the levels achieved in the USA, and cannot be considered in any sense as an alternative source of funding. They also pose a related problem of undue influence from donors. Some states of Europe would get more benefit than others, because of their cultural and economic infrastructure.

- **Surpluses made on commercialisation of services, or made from royalties and equity**

More commercial services activities are needed. They should be based on university partnerships with firms (not sub-contracting) and they shouldn't compromise university independence.

Such activities should be evaluated by universities on the basis of their real cost..

Universities should be given the freedom to collect and use royalties on patents and provide services

Good practice should be promoted in the European Research Area to avoid harmful competition between universities.

2.5.3. Effectiveness of funding allocation and transparency

Questions for the debate in the communication

– How can the maintenance of democratic access to higher education be combined with a reduction in failure and dropout rates among students?
– How can a better match be achieved between supply of and demand for university qualifications on the labour market, through better guidance?
– How can the transparency of research costs in the universities be enhanced?

One issue is inadequate research funding and limited financial flexibility. The level of funding for universities and for many key areas of research is low compared with that in the USA.

In most European countries, government provides core funding of university research infrastructure. This infrastructure is then used to undertake focused research projects funded by research grants. But many fund providers and governments do not cover the full costs of research. As universities aim at international competitiveness and increase their research, they are led to "overtrading".

For some respondents, **an efficient use of public funding** made available to universities for research can be only attained if it is **assigned in competition** and **only for a limited duratio**n. They support a "mixed financing", with public and private sources, as a way to expand the freedom of research.

In addition to an increased competitive allocation of public funds, the basic conditions for the mobilisation of private funds for universities must be improved with an attractive regulatory framework.

There are benefits in enhancing the value of research results by making them public with due consideration to the confidentiality required by contractual research.

There is a need **to establish and disseminate in Europe a commonly accepted, well-defined costing method** taking into consideration overheads costs and pre-existing background knowledge.

2.6. UNIVERSITY GOVERNANCE, AUTONOMY AND MANAGEMENT

2.6.1. Governance

There is consensus on the idea that **autonomy in the organisation, definition of strategies and policies should be reinforced in universities** with greater responsibility. This implies reinforcing the responsibility of decision-makers and actors from the university community, with an adequate organisation.

Nonetheless, governments remain in charge of the national regulatory framework, which guarantees quality and equality of education. Thus, more university autonomy implies a **redefinition of the government regulatory role**.

More interactions should exist between the different communities. The direct **incorporation of representatives from society** into departments or units responsible for defining the courses offered to society by the university could be useful. Similarly, participation of **university representatives** would be desirable **on company boards**, in professional or business associations in order to strengthen bonds between the university and industry.

2.6.2. Autonomy and accountability

The **balance** between research and learning provision, its quality and also the status of the university as a corporate institution, are strongly affected by both the underpinning financial provision and the **quality of leadership and management of the institutions**.

Thus, universities must improve and strengthen their individual strategic capacity. They must develop autonomy, which cannot be dissociated from accountability.

Similarly, there is consensus that universities must achieve **greater transparency and accountability**, as recipients of significant public expenditure. This is particularly necessary because of the high costs associated with many large-size institutions, as well the need to serve the regional and local communities.

While there is rising demand on universities for external quality assessment and quality assurance processes, it will be of significant benefit for the Europe of learning to establish a more feasible and, above all, consistent system of quality assessment.

Similarly, no matter what governance schemes are used, universities need to have decision-making autonomy, but also clear lines of accountability.

2.6.3. Management

Clear and efficient management structures are a precondition for strategic autonomy.

In order for universities to be able to better fulfil their responsibilities, **changes are often needed to university law**. Such changes aim at providing universities with a legal personality, which means the ability of the university to accumulate property, the

creation of a system of management of finances that serves universities' tasks and significantly improves control, and provision of a motivating and rewarding personnel policy.

Restricting funding particularly when universities are expanding, runs the risk of developing inefficient and wasteful management.

With greater complexity of legal and financial life, academics are often not prepared for the demands made on them as administrators. **Management must not simply be added on to academic tasks but needs to be properly funded.**

There is a **'management deficit'** in many universities, mostly at the departmental level, which is concerned at the sheer volume of administrative work, more than at senior management positions.

Clearly defined responsibilities must exist in the management structures, which can be divided into the fields of "supervision", "direction" and "execution".

A reduction in the number of departments, methods for pre-identifying and pre-training new Heads of Department, and continuous professional development, especially in newer areas such as risk management, coupled with significantly better pay, are going to be essential components.

Managerial skills are needed in order to introduce a "result-oriented" mentality with a "problem-solving" approach. Meanwhile the bureaucratic rules should be considered more as a "tool" to achieve results and goals, and not as the final target. In light of this, **recruitment of non-academic executives** for management positions could be considered.

This pre-supposes that highly decentralised models of management will become the norm in European Universities, and that legislative changes are most often needed.

There should be recognition of the **vital role** that **quality assurance systems** play in ensuring high quality standards. **Quality assurance** procedures should be based on 'Codes of good practice' and the development of joint criteria.

2.7. UNIVERSITIES AS POLES OF REGIONAL DEVELOPMENT

Questions for the debate in the communication

- In what areas and how could the universities contribute more to local and regional development?
- What ways are there of strengthening the development of centres of knowledge bringing together at regional level the various players involved in the production and transfer of knowledge?
- How can greater account be taken of the regional dimension in European research, education and training projects and programmes?

2.7.1. Background

The Communication stressed the growing role of universities in contributing to regional development, for example through the development of technology centres and science parks, cooperation structures with local businesses, regional development strategies, and regional networking of universities. In addition, the Communication asked what more could be done to enable universities to contribute more effectively to regional development, to bring together regional actors through technology centres, and to take account of the regional dimension in European projects and programmes.

Many, but by no means all, of the responses addressed to some extent the issue of regional development, indicating that the relevance of this issue varies amongst those participating in the debate. In some cases responses came from regional groupings of universities (e.g. the North West Universities Association in the UK) but none from regional governments.

At the end of 2003, the Committee of the Regions adopted an Outlook opinion on the Communication. .[9]

Since the publication of the Communication, DG RTD has launched the "Regions of Knowledge" pilot action, which includes support for University Driven Actions for Regional Development on a transregional basis.

2.7.2. Analysis of responses

In general terms, respondents noted that **the role of universities in regional development varies greatly by region and country**. In particular it depends on national policies and the level of activity/competence of regional government in this area. For example, in Finland in 2002 the Ministry of Education produced a regional strategy to ensure a stronger regional impact for education and research and universities submitted proposals for joint regional strategies. In England, the establishment of the Regional Development Agencies has played a critical part in stimulating the interaction of English universities with their regions.

Many respondents commented that the level of interaction depends on the development and **quality of partnerships** between universities, industry and regional authorities. Regions must develop networks of extensive collaboration between research and commercial actors, including research groups, technology transfer organisations, professional associations (trade associations, chambers of commerce) and public institutions (research councils, regional development agencies). Such partnerships should allow strategic collaboration between universities, industry and governments. A number of initiatives have been used to create such partnerships:

- In the UK in 1999/2000 the 8 English Regions and London, with the support of government funds, established **regional consortia between universities** present in each region.

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[9] Outlook Opinion of the Committee of the Regions of 20 November 2003 on The role of universities in local and regional development within the context of a Europe of knowledge, EDUC-017.

- Following this development, **regional science and industry councils** are being established in the English regions as contact and advisory groups for industry, regional agencies and universities.

- Scotland supports networking of research teams amongst its Universities.

Several respondents remarked on the **lack of funding streams in Europe to support universities' engagement with the region**. Such funding would allow a strategic alignment of research expertise and regional economic priorities and act as a lever in significant levels of investment. Nevertheless, the UK government's Higher Education Industry Fund (£90 million/year) does support outreach activities from universities to business, but these are still considered to be insufficient. Policies to concentrate research funding on a smaller number of 'excellent' universities could aggravate the problem and reduce the ability of universities to contribute to regional development.

Many commentators noted the stark contrast between Europe and the US in funding models. Regional development in the US has been strongly associated with the development of comprehensive, research intensive universities. This has been achieved through a mix of federal and private funding for basic research complemented by state funding to support regional economic development - a model applied not just in high tech regions, but also in less developed regions.

The contributions bear witness to the rich landscape of ways in which universities contribute to regional development:

- **Contributing to regional competitiveness, through:**
  - The creation of enterprises to exploit research outputs.
  - Development of technology clusters and technology centres: "universities can be powerful catalysts for high visibility clusters of excellence, able to stimulate R&D investment, entrepreneurial growth and regional development."
  - One example is provided by the Brussels Capitale region technology centres development policy.
  - Providing advice and expertise to SMEs: for example the "KnowledgeNorthWest" brokerage service helps companies access the latest research relevant to their industrial sector.
  - Investing in land and property: science parks initiated by colleges. For example the Cambridge Science Park, initiated by one of the colleges, was a major factor in the development of the regional high technology sector.
- **Contributing to skills needs** in the region through training and lifelong learning programmes, responding to employers skills needs, helping to retain graduates in the region, developing regional skills strategies.
- **Supporting regional governance**, through provision of advice, participation in developing regional strategies, identifying future growth sectors and focusing research on regional problems.

- **Enhancing the image and visibility of a region** and its strengths, for example through mapping exercises, creating research directories, supporting missions to other regions. Universities can improve the 'brand' of a region: for example Cambridge University has contributed to the regions reputation for scientific excellence and "low risk place to do a high risk thing".

- **Fostering knowledge transfer to the public sector to improve public services**: in particular in areas such as environment and healthcare.

- Contributing to cultural and sporting activities in the region and to urban and rural regeneration.

2.7.3. Potential for future actions and policies

Two main suggestions were made for future actions:

- **Continued and expanded European level support for inter-regional networks**[10]**.** Such networks should involve universities and allow mutual learning and facilitate technology and knowledge transfer. One suggestion was for twinning between regions with similar socio-economic profiles.

- **Better developed funding streams** to support research of relevance to regional development needs. In particular, several contributions argued for better use of the opportunities from the Structural Funds to support university engagement in regional development. However, it was pointed out that regionally focused funding must only support high quality research and should not be biased only towards those regions with low research activity.

2.8. BROADENING THE INTERNATIONAL PERSPECTIVE OF EUROPEAN UNIVERSITIES

Questions for the debate in the communication:

– How can European universities be made more attractive to the best students and researchers from all over the world?
– In a context of increasing internationalisation of teaching and research, and of accreditation for professional purposes, how should the structures, study programmes and management methods of European universities be changed to help them retain or recover their competitiveness?

The international perspective of European universities attracted less comments, compared with other themes of the Communication. From a reading of the contributions this was not because this topic was deemed to be less important than other issues raised. It was simply because **this theme is not one that can be addressed in isolation**. No

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[10] For example, the German Federal Ministry of Education and Research wrote "Germany considers that the regional dimension should be given greater importance in European programmes in order to promote the development of regional and cross border collaborations which would in turn contribute to consolidating the regions… Structural policy measures should be opened up to a greater extent to include research and education projects."

easy solution can be applied to ensure that Europe's has world class institutions capable of attracting and retaining the best students and staff from around the world.

Nevertheless, there emerged a **broad consensus** of views around several areas that were connected with the **international stance** and **outlook of our universities**.

2.8.1. The reactions

Several contributors took exception to what they considered to be the overall negative impression that the Commission had portrayed in the document of European universities with 'poor facilities, narrow career prospects and a generally unattractive environment**.**' Countering this by pointing to the fact that in recent years there has been a 'general increase in the number of international students and staff drawn in particularly to study and work in France, Germany, the Netherlands, Sweden and the United Kingdom.'

Indeed in the pursuit of further opening up universities to outside and international activities one group was not supporting the view that 'increasing internationalisation of university activities' was needed 'within research and teaching'.

It was universally agreed that **one of the prime functions of any university is to attract the best students**. Today's best students tend to make the greatest contribution to society at large tomorrow.

So the **efforts of the Commission to strengthen the international outlook of European universities** by providing resources to enable students and visiting scholars from around the world to engage in postgraduate study at European universities through its recently adopted **Erasmus Mundus** initiative **were widely welcomed**. Equally the **Marie Curie scheme came in for similar praise**.

Though, it was commonly held that the Commission had given 'insufficient attention to the needs of doctoral education programmes in Europe'. It was also seen as essential that further efforts should 'be made to make the junior stages of academic careers in Europe more attractive and more open from other parts of the world.'

There is consensus on the view that **foreign students, teachers and researchers are an important asset** in developing the quality of the research and educational environment.

Similarly it was thought to be particularly valuable for EU students to study and **research in other countries**.

2.8.2. Transatlantic comparisons

Cross comparisons with the higher education situation in the United States were rife. The Commission has pointed out the ultimate strength of the United States: **the attraction and retention of the best talents from around the world**.

Many cited that all too often the **prospect of undertaking postgraduate research in the United States in comparison to Europe was seen to be exciting**, 'largely because of the strong support for basic research, which permits young researchers [in the United States] to take on the most demanding **research challenges**.'

Others underlined that researchers chose the United States 'as a destination because of the **good employment prospects in the country and the flexibility of American firms in taking on foreigners**'.

Drawing attention to the **'frustrating paradox' of Europe** training its researchers so well up to doctoral level to then see them depart for **'lack of career opportunities** to the United States a country that has not funded their previous education.'

For many, Europe should **'pay top professors salaries comparable to those in the US'**. More had to be done to involve 'highly qualified researchers and guest lecturers from prestigious foreign universities in research and teaching' at Europe's universities.

United States helps private persons and companies, via tax concessions to invest in universities. The fact that 'there are **no comparable conditions in Europe [for universities] to raise their own finance in the long-term**' was raised.

Indeed it was seen to be **essential that European researchers should be 'granted the same freedom** [as their American counterparts] **to collect and use royalties on patents**.'

Several respondents pointed to the generous resources that have been made available to 'US federal laboratories [that have] done so much to offer natural nuclei around which significant collaborative efforts can coalesce.'

Some contributors thought that 'a wholesale transplantation of some of the more innovative working practices of the US higher education system may neither be appropriate nor can necessarily be expected to yield the same results in Europe.'

Several concluded that the best way to achieve this would be to establish the equivalent of a '**European academic accreditation agency**.'

2.8.3. Lift barriers and undertake actions

Little has been done to correct today's **obstacles** although they have been well documented: **social security**, **pension**, **visas clearance**, **residence permits**, **language competence**, and **recognition of qualifications**.

Furthermore many viewed participation in the Commission's **framework programme** as important in terms of developing a university's international research capacities. But it was equally seen to be an exercise that is increasingly bound by the strictures of red tape.

To strengthen excellence and reinforce attractiveness, European universities should:

- Promote **international contacts** and **partnerships**.
- Continue to develop a **system** of easily 'readable' and **comparable degrees**, based on undergraduate and postgraduate studies to enable EU citizens to effectively use their qualifications, competencies and skills throughout the European Higher Education Area.
- Work on **joint qualifications**; make readable the higher education qualifications.
- Consider the use of recruiting agencies to make it easier to recruit talent from third countries.
- Develop a comprehensive system of scholarships.

- Develop participation of under-represented groups, such as **women** and **ethnic minorities** and present them with real career opportunities.

- Remove all obstacles to the **free movement** of students, teachers, researchers and administrative staff in particular with non-European countries.

3. EUROPEAN ADDED VALUE

Nearly all respondents believe that in action at the European level is essential. The Bologna process and the European Research Area are judged to provide a natural framework for such action. Most of the ministries rightly insist that the regulatory and funding framework for universities remains a matter of national competence and that Europe should respect the diversity of these systems.

3.1. JUSTIFICATION AND CALL FOR EUROPEAN ACTION

3.1.1. Legitimacy of European level

The Community has a legal basic for fostering co-operation and complementary actions of Member States, as regards university and in particular research. The European Community has competence "to contribute to fostering a quality education". Based on art. 149-150 and 169 TCE, the European Community has also a legal basis for the coordination of research activities. In addition, the Lisbon Council provides provision for European coordination of research policies.

Contributors agree that scale of the challenges justifies a coordinated response and actions at a European level. Universities face major challenges at the European and International level. Market logic doesn't apply easily to education: for example, almost seven years are needed to train a research worker. The importance of the issue calls for a European policy regarding higher education.

Europe has a **natural competence** to promote competitiveness and bear the responsibility for safeguarding European culture and identity. Common **goals** and **objectives** have to be defined, within the constraints of respect for different European cultures, values and diversity. The public mission of education and research must be fully acknowledged while allowing more competition and market openness.

3.1.2. EU as a catalyst for a coordinated and articulated change

The EU can act as a catalyst of changes at the national level. There is need for proposals on coordinating the Community's policy on higher education with research policy. The EU can promote international and support national measures that contribute to this.

In the complex and very diverse higher education and research system, **European coordination and funding policy must strive to produce a favourable framework** to increase effectiveness and competitiveness of Higher Education and Research, while preserving that which makes the European University unique.

To do so, Europe should:

- **Strike a balance** between the diverse university missions, encompassing traditional missions but also including economic, regional development and innovation goals.

- **Improve its framework and reinforce** national policies and regional initiatives. Consolidating the excellence of universities doesn't mean standardising but rather building on Europe's diversity.

An **appropriate articulation** should be found between:

- Competitive political logic at European, national, regional and university level, in order to achieve **effectiveness**;

- The European and national level in building the **European higher education** area, and the European regions.

With the **regions**, Europe appears to be the second new area for **university development**. In particular Europe should allow the emergence of major poles in regions and **network** them.

3.2. INITIATIVES REINFORCING UNIVERSITY RESEARCH

3.2.1. Pursue Lisbon, Barcelona goals and the Bologna process

For most stakeholders, **Lisbon, Barcelona and the Bologna process provide an effective and complementary framework for the modernisation of higher education and research**. The institutionalised responsibilities of Member States in their national system have to be fully acknowledged in any coordination process.

The Bologna multilateral, bottom-up process will create the dynamics for further development of the European area for higher education. This will be done through **cooperation**, **transparency**, **quality assurance** and several **mobility** measures.

The further steps for the two European Areas and the Framework Programme offer a means of **interconnecting university research potentials** and emphasising the European Research Area, without over-centralisation, and through decentralised alliances.

For one member state, the **European exchange of experience** conducted within the Work Programme of EU Ministers of Education up until 2010 can also provide **effective support of national efforts**. It helps decision-makers and the public to gain a better understanding of the necessity of investing in education and research as a means of securing our future

Some stakeholders wish targets to be set. As an example, growth and prosperity are contingent on a high level of education throughout the population: thus the proportion of young people who begin higher education should also increase and recruitment should be extended to new groups. Several Member States have set targets. As an example, the Swedish Government set itself a 50% target (50% of those born in a given year shall have embarked on higher education studies by the age of 25).

Common EU targets and **indicators** could be established to identify quantitative targets (absolute percentage of young people going to education) and qualitative targets (e.g. correlation between the increase of resources and the rise in the number of students).

In addition, amongst the efforts to improve quality, it is important to consider the initiatives taken within the EU as a result of **established objectives and indicators** linked with the Lisbon process.

3.2.2. EU programmes have an important role

With the support of research and education, **EU programmes** Member States get incentives to carry out reforms to **increase international mobility**.

Most significant among the **6th Framework Programme** measures are the knowledge transfer between universities and firms, which includes SMEs oriented measures and the Marie-Curie actions. The 6th Framework Program also provides important support for preserving academic excellence in Europe, by increasing the participation of universities in research projects, through the **new instruments**.

The substantial increase in resources provided by the 6th Framework Programme for mobility is welcomed, although more time is needed to appraise its effect. Other important 6th Framework Programme measures for universities are those for **exchange of scientists with third countries**, reinforcing cooperation with firms, credits for developing new teams of researchers and suppression of age limits.

3.2.3. Complemented with Member state actions

Member states action should complement EU programmes. To promote mobility and preserve exchanges relationships, EU programs must, both now and in the future, be combined with promotion of similar initiatives at the national level.

European funding for university research is a major issue There is a suggestion that the European Union should **invest more in basic research**, as a source of new intellectual capital and support the vital interaction between basic research and education in intensive research universities.

Europe could play a role in financing. Quite a few stakeholders are convinced that Europe should develop **competitive funding** and competitive mechanisms (and avoid pre-allocation procedures). This would allow a selected set[11] of powerful research universities to emerge with resources analogous to their US counterparts. This view, however, is not shared by all, as stakeholders have diverging views on public versus private financing.

Nonetheless, private financing measures should never be seen as a substitute for the financing by member states of universities' fundamental research and education role. Indeed, it is the opinion of nearly all stakeholders that Member States should increase and absolutely avoid cutting back their investments in education and knowledge.

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[11] One stakeholder estimates this number between 50 and 100.

4. RECOMMENDATION AND WAY FORWARD

4.1. RECOMMENDATIONS FROM CONTRIBUTORS FOR ACTION

4.1.1. Promoting knowledge on universities

Europe should promote knowledge and research activities in university systems, including prospective exercises on reinforcing observatory platforms supporting experimentation in universities. It should acquire knowledge to develop different models, identify their constraints and limitations, and analyse in depth their diffuse characteristics with a view to reinforcing a common approach. **Statistics** are also essential for such aim.

4.1.2. Building on and extending successful European programmes

The success of the Socrates and Leonardo programmes needs to be greatly enhanced for the next phase in 2006. The objective has to be to establish a permanent, diversified and large-scale cooperation. An immediate aim has to be the establishment of European networks and integrate these with the needs of new Member States.

Broadening the international perspective of European universities can also be promoted by important European programmes and measures, such as the Erasmus Mundus, the Framework Program, the IHP Programme and the development of Joint degrees.

The European Union and Member States should provide **more support to allow universities to exploit the possibilities offered by the 6th Framework Programme's new instruments**, which also add new constraints (consortium, intellectual property management).

4.1.3. Fostering the regional dimension with better oriented funding

Europe has a duty to foster the regional dimension in projects and European programmes of research, education and training.

The **Structural Funds could be better oriented** towards projects in research, education and training. However, care is need to ensure that only high quality university activities are supported . While the **European Social Fund** and **European Regional Development Fund** are helpful, they are only applicable to certain regions and may not sufficiently take into account university procedures and contexts. Programmes on interregional cooperation, such as the current **INTERREG III,** can provide valuable support to joint partnerships between universities.

Cooperation between European regions needs to be supported by **information (cartography of scientific potential), and common projects**. Best initiatives can be shared such as the **UK Framework for Regional Employment Skills Action** in each region. The European Commission can support increasing bilateral contacts between university labs and research centres among European regions.

Other European funding is available through regional **training projects and programmes** that incorporate awareness of the regional dimension and mapping exercises for common research and training programmes, which will support

collaborative activities. Consideration needs to be given to funding support for Higher Education staff, there is need for a central expertise database to facilitate the identification of regional partners and strengths.

The European Union should deepen cooperation with regional economies. In particular It can provide more incentives for universities to engage into research or technology transfer with SMEs.

Local and regional development can be reinforced through cooperation stimuli such as **Leonardo da Vinci** and **fostering European patents**.

4.1.4. Cooperation, networking and exchanges of experiences and practices

There should be continued **encouragement and support for collaboration between higher Education institutions** at the regional, national and international level to address the increasingly rapid global change.

Beyond the 6th Framework Programme Networks of Excellence, several other networks can be used. An example is The COST networks, favour flexibility and light structures, as they are based on bottom-up approach. There are examples of successful European networks in the area of mobile telecommunications, which can power growth. In this way, the Commission can encourage networking between the **Centres of Excellence**. Other forms of virtual collaboration need to be encouraged.

As an example, the Commission could bring financial support to '**centres for research and exchange of idea**s' such as the European Institute in Florence.

4.1.5. Consolidating the excellence of European universities

First, Europe must create **the right conditions for excellence**. It can help universities to rethink the link between teaching and research activities.

A path to explore is to increase the number of universities which are excellent in specific areas.

The issue of concentrating the resources cannot be avoided. Such a concentration should not undermine the richness of the research distribution.

More competitive funding processes need to be developed to foster a set of powerful research universities.

Secondly, Europe must **maintain excellence in human resources** in science and technology.

Stakeholders recommend measures such as **the developments of methods to compare investment in education** with other social investments.

Transparency of research costs in the universities could be enhanced. As an example, the UK Transparent Approach to Costing (TRAC) system of reporting and financial management for Higher Education institutions has been developed to allow the full economic cost of publicly funded and non-publicly-funded research to be measured, along with teaching and other activities.

Other measures are recommended.

4.1.6. Fostering evaluation and selection

Member States should develop a mechanism for selection and evaluation of excellence. The future European Council for Research could contribute to this task.

Member States should be encouraged to implement national mechanisms that guarantee qualitative scrutiny and long-term thinking about the activities in their educational system. A collective rationalisation of the variety of **evaluation regimes** in Europe is needed at European level.

4.1.7. Building a supportive funding and network for innovation

Increasing funding should be made available for knowledge and technology transfer, as well as the creation of spin-offs. National and Regional systems can be developed such as the **Higher Education Innovation Fund** in England and similar initiatives in Scotland (**Proof of Concept Fund**) and Wales to promote knowledge and technology transfer. They are complemented by Entrepreneurship training or seed funding programmes (such as **UK Science Enterprise Challenge training programme**, **University Challenge seed funding programme**, **LINK collaborative research scheme**), and transfer support structures (such as the Scottish Institute for Enterprise or the Scottish Enterprise/Royal Society of Edinburgh Enterprise Fellowships).

Commercialisation of research work can be fostered **by lifting barriers** such as the cost of intellectual property protection, with an effective Community patent.

Europe could **encourage a favourable framework** consisting of taxation advantage and European start-up funding together with specialist personnel for technology transfer and start-up creation.

4.1.8. Mobility of human resources and attractiveness

Recommendations from stakeholders address the attractiveness of careers in R&D, gender issues, training, and interdisciplinarity / intersectoral mobility.

The efficient management of doctoral studies is one of the most important requirements for Europe in order to consolidate and develop a knowledge-based society.

As already indicated, most of the issues underlined by stakeholders have been taken into account by the Communication "Researchers in the ERA: one profession, multiple careers." (see part 2.2 : Improving Human resources).

4.1.9. Fostering research intensive centres of excellence and networks

There is consensus on the fact that a successful exploitation of research derived innovation is increasingly at the heart of major change within society and that it is crucial to its economic success.

Europe needs a world-leading research base, which is most efficiently based in **world class research intensive universities**. It can be complemented by an industry with the capacity to exploit research as part of its competitive armoury, effective mechanisms for interaction between them and well developed research networks in which research intensive universities are major nodes of a broader network.

For some respondents, **in order to achieve this, Europe must:**

- **Increase funding** to improve research infrastructure and project funding,.

- **Help research intensive universities to develop greater financial flexibility** to pursue research opportunities as they arise. Research intensive universities can be powerful catalysts for high visibility clusters of excellence, able to stimulate R & D investment, entrepreneurial growth and regional development.
- Ensure that funding is based on competition.
- Develop a cohort of excellent and ambitious young researchers and ensure that they are placed in intellectually challenging and well-supported centres.
- Participate in setting up European Excellence University Networks, linking high level Universities.

4.1.10. Providing information to university stakeholders

The Commission could broaden European community Portals such as Ploteus.net (Education Portal) to allow a global reach including access to academic researchers and citation of research work. This will increase market information for research and contribute to network academics.

In relation to this, **existing networks**, such as the Chamber of Commerce networks[12], the Euro Info Centres (EIC), Innovation Relay Centres (IRC) and National Contact Points for the 6th research framework programme (NCP) could be used and further exploited.

4.2. FRAMEWORK AND WAYS TO ACHIEVE PROGRESS

Many stakeholders ask for a strategic approach at European level and joint action by the European Community, Member States and regions. The call is for more European coordination to foster consultations, cross collaborations and exchanges of experience.

4.2.1. A strategic approach and more action

- **An appropriate framework for joint effort by EU, member States and stakeholders**

The creation of the European Higher Education area and the consolidation of the European Research Area are the supporting framework to **make universities a key node of the knowledge society.**

The European Commission and national governments need to **combine their contributions towards** achieving progress in academic training and research, while preserving a balance between the heterogeneous demands on the universities and maintaining diversity.

Common Targets and indicators could be developed. These could look at broader recruitment to higher education, promoting increased external funding, increasing the number of patents and increased availability of risk capital to institutions and researchers.

- **Encourage Member States to develop strategic approach and actions**

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[12] One example is the *IHK Innovation Consultation*, network of 82 German Chamber of Industry and Commerce - DIHK

European coordination should favour national expansion of higher education. This requires an equivalent increase in associated resources up to nationally set targets.

Member States could be encouraged to develop their strategic approach to foster better university–industry relationships, to take greater advantage of the booming market in services, to increase knowledge transfer, to promote innovation and entrepreneurship within the universities. An example is the British strategic **White Paper on the Future of Higher Education**[13].

Member States should be encouraged to promote initiatives such as the UK's **Prime Minister's Initiative** ('PMI') for attracting non-EU overseas students to the UK universities and to stimulate partnerships. Targets and indicators could aim for an increase by a certain percentage of the proportion of foreign/ non-European students and researchers in each country.

In this way, and more broadly, member states could establish qualitative and quantitative targets and indicators.

4.2.2. European Coordination striving at a favourable framework

Cohesion Funds could be better targeted in support of regional projects in research, education and training.

The European Community can help by supporting reforms that countries are implementing under this process and by using its resources to encourage cross border collaboration.

The European Community is encouraged to consider sound practice in establishing and **extending general support programmes**, especially those which explicitly contribute to a more balanced partnership of the various European countries.

Commission and member states could **establish a systematic process for strategic consultations** between stakeholder groups, as well as the academics themselves. Such fora could develop joint European-country priorities and packages of support that would focus efforts towards achieving a more balanced contribution of the various European countries. These would be applicable both to mobility and cooperation within Europe and aid in the delivery of a first-class university system. Such structures could also enhance Europe as a successful competitor and an attractive partner of cooperation, in a global setting.

As one stakeholder states, "Europe is a sponsor of the generation of visibly useful research". The European Union can contribute more to the development and maintenance of academic and research excellence in Europe by ensuring **an efficient exchange of experiences and dissemination of best practices** between European Higher Education institutions. In addition, developing European networks of institutions could make a useful contribute.

There is a strong intrinsic value in **cross-European consortia of universities** learning from each other, and in the dissemination of knowledge and best practices between and across consortia, networks and university groupings.

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[13] Document published on 22 January 2003

Internationalisation of higher education and research is a prominent element, supported by European programmes (such as Erasmus Mundus) and joint actions (joint degrees). The European dimension also adds to universities in the context of regional and local development. Best practices needs to be consolidated in both fields.

4.2.3. The need for a method of coordination

There is need to **achieve concrete steps forward** and to **coordinate** a genuine partnership between member states, the European Commission, academic bodies and universities. The provision of a better framework to promote excellence in universities can only be achieved when Europe has in place a method of coordination that can support synergy at all levels.

For some stakeholders, the development of the **'Open Method of Co-ordination' process**, as set out in the Lisbon Council conclusions of 2002, is helpful for policy development in this area. It should also be highly beneficial in assisting the Central and Eastern European universities to continue to overcome those problems, which have not been completely resolved during the past decade of transition.

For these stakeholders; consideration should be given to **'how the Open Method of Coordination could adequately add value'** so as to ensure cooperation between national authorities, the European Commission, academic bodies, the universities themselves and other public and private stakeholders (regions, industry).

ANNEXES

Annex 1: Table of contributions received by type or organisations and by countries

Type	
Private individuals	7
Associations (universities, higher Education, Institutes and societies)	34
Institutions and Trade unions	12
Business	3
Universities	32
Royal Societies	1
Parliamentary Représentatives	2
Government Ministries	12
Total	103

Contributions per countries	
Belgium	9
Cyprus	1
Czech Republic	2
Danemark	3
Germany	13
Greece	1
Spain	6
France	7
Italy	2
Netherlands	1
Austria	3
Poland	2
Portugal	2
Slovakia	2
Slovenia	1
Finland	3
Sweden	5
United Kingdom	16
Norway	2
Chile	1
Bulgaria	1
EU	20

Annex 2: Some examples of Member States policies and practices quoted by stakeholders

I. Financing

United Kingdom

- UK Transparent Approach to Costing (TRAC) system of reporting and financial management for Higher Education institutions

Germany

- Studienbeitragsmodell", a model for a socially acceptable way of introducing tuition fees through a broad-scale income-contingent loan system;
- "Studiengebühren als Option für autonome Hochschulen", a concept for the introduction of tuition fees in Germany elaborated with the German Rectors' Conference (HRK);
- "InvestiF" and "GefoS" a concept which addresses both the individual and the institutional component of higher education finance;

II. Autonomy and Governance

Germany

- "Acht Empfehlungen zu Willensbildungs- und Entscheidungsstrukturen", a set of recommendations defining benchmarks for the distribution of competences and decision-making power within higher education institutions that has guided recent reforms in several higher education laws at the Länder level (Landeshochschulgesetze).

III. Innovation

Germany

- EXIST programme, developed at National and Länder level, which supports entrepreneurship networks at and around universities
- IHK Innovation Consultation, network of 82 German Chamber of Industry and Commerce – DIHK

Bruxelles – Capitale Region

- Encouraging patents, the Region of Bruxelles-Capitale encourages patenting and patent maintenance, by the appropriate subventions[14].
- Active collaboration policy with firms (CREF, Guide on university-companies partnership, March 2002)

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[14] *In* articles 2 c, 8 b & 10 al. 2 of the Ordonnance relative à l'encouragement et au financement de la recherche scientifique et de l'innovation technologique », 21 février 2002

United Kingdom

Scotland has developed several innovation supportive programmes

- The Entrepreneurship training programmes now being delivered to most science and engineering undergraduates in Scottish universities under the aegis of the Scottish Institute for Enterprise.

- The RSE Enterprise Fellowships that take a number of postgraduates, trains them and assists them in setting up enterprises, based on their research.

- The Proof of Concept funds to encourage academics to commercialise their research, where with the assistance of commercially aware mentors, academics can either take their ideas to commercialisation or towards franchising.

England disposes of a similar set of funding and incentive programmes

- Higher Education Innovation Fund

- UK Science Enterprise CHALLENGE Training Programme

- University CHALLENGE seed funding Programme

- LINK collaborative research scheme

Germany

- IHK Innovation Consultation regional and local innovation centres

Finland

- The Otaniemi International Innovation Centre for Finland (OIIC) supplies the university staff with current information on founding spin-off-companies, getting know more of intellectual property rights and inventions, getting support for protecting and developing inventions and promoting the technical, productive and commercial use of inventions. OIIC is a part of the HUT Administration Office.

Cyprus

- Business incubator arrangement

- Regions of knowledge

Region of Bruxelles – Capitale

- Diffusion on information on o regional opportunities through the colloquium *Regional connexion, vitality of the European Area*, Bruxelles, November 2002)

- Cartography of the regional scientific potential: *Brussels R&D Cartography*).

United Kingdom

- UK Framework for Regional Employment Skills Action. This Framework id developed in each region.

IV. Centres and Network of Excellence

- *Transregios* or transfer communities: special research programmes, research centres, which are being set up by the *Deutsche Forschungsgemeinschaft DFG*.

V. Post-doctorates

Germany

- *Deutsche Forschungsgemeinschaft DFG*, supports postgraduate study groups (to promote young researchers) in Graduate Schools, in the joint International Research Schools (IRS) of Max Planck institutes and universities, and in doctoral study courses.

VI. Women and Science

Germany

- The Funding Programme on Equality of Opportunities to promote women in research and teaching within the university and science programme.

United Kingdom

- The UK Government published a "Strategy for Women in Science, Engineering and Technology", in April 2003.

VII. Youth and Science

Germany

- "Science in Dialogue", campaign aimed at rising among youth early interest in mathematical, natural science and engineering questions.

VIII. Internationalisation and attractiveness

- Alexander von Humboldt Foundation (AvH) and the German Academic Exchange Service (DAAD) promote the inclusion of highly qualified researchers and guest lecturers from prestigious foreign universities in research and teaching.

- "Concerted Action on International Marketing for Education and Research in Germany". This measure was set up in October 2000 and is chaired by the Federal Minister of Education and Research. Representatives of the Federal Government, of all German *Länder*, of the municipalities as well as of industry and science and education and research are participants. Focus is on marketing for research and education, attracting foreign researchers and students and motivating German researchers to return to Germany.