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institutions with a focus on
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**Report of the ERA
Expert Group**



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Strengthening research institutions with a focus on university-based research

Report of the ERA Expert Group

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This is the Final Report of one of the seven Expert Groups set up by DG Research of the European Commission in the context of the follow-up to the Green Paper 'The European Research Area: New Perspectives' adopted by the Commission on 04 April 2007.

Expert Groups were set up for each of the six ERA dimensions identified in the Green Paper, and one on the overall vision and rationales for ERA.

The list of Expert Groups is as follows:

- EG 1: Realising a single labour market for researchers
- EG 2: Developing world-class research infrastructures
- EG 3: Strengthening research institutions
- EG 4: Sharing knowledge
- EG 5: Optimising research programmes and priorities
- EG 6: Opening to the world: international cooperation in S&T
- EG 7: Rationales for ERA

The overall objective of each of the Expert Groups EG 1 to EG 6 was to identify and define possible measures and actions concerning the relevant ERA dimension, taking into account existing expertise, available evidence and the major elements stemming from the debate launched by the Green Paper. Expert group EG 7 was tasked with developing and expanding rationales for ERA and refining or suggesting a reformulation of the ERA vision proposed in the Green Paper, based on an analysis of the main issues and factors affecting the efficiency, effectiveness and attractiveness of the European research system.

More information on the ERA Green Paper debate, public consultation and follow-up can be found at: <http://ec.europa.eu/research/era>

Preface

The Expert Group (EG) on strengthening research institutions with a focus on university-based research was set up as one of several groups in the follow up to the Commission's Green paper on the future of the European Research Area.

The group entered into very fruitful discussions based on the extensive experience of the members of the group. The group collectively covered experience of leadership in research on university, institution, national and European level.

The focus of the group has been to find the most important areas for change that would facilitate the strengthening of Europe's universities in their diverse environments. The current diversity of Europe's university system has the potential to be a key strength. The main consideration of this work, therefore, was to explore ways that universities can continue to underpin Europe's knowledge economy through diverse missions related to national and regional settings, within a global context.

Early on in its activity, the group decided to identify and focus on a few crucial areas requiring action. The group has concluded its work and now presents this report.

The group has had the privilege to work with two rapporteurs. Christopher Hale has been the translator of the discussions into a report and Jose Ginés Mora Ruiz supported the expert group with the analyses of the online consultation and other contributions. The group has received substantial and crucial support from the European Commission, in particular from the Unit Universities and Researchers.

On behalf of the Expert Group, I wish to extend our sincere thanks for the support we have received. I personally wish to thank everyone involved in the development of this report for very good cooperation and great commitment.

Christina Ullenius

Chair

Executive Summary

The overall objective of the Expert Group (EG), launched in the context of the follow-up to the Commission's Green Paper on 'The European Research Area: New Perspectives', was to identify and define possible measures and actions regarding the strengthening of research institutions with a focus on university-based research (Ubr). The EG sought to provide an overview of recent initiatives, current challenges and existing trends, identifying new possible evidence-based policy initiatives and assessing the various policy options and their potential impact.

The report highlights some of the problems and challenges for Ubr, focusing on four key areas that were selected by the EG. It proposes eight recommendations and further policy actions that can be undertaken at institutional, national and European level, which could provide added value for the European Research Area. It also examines the assumptions and preconceptions within the Green Paper, highlighting areas where it was considered the debate needed to be redefined.

Specific Recommendations

Recommendations 1 and 2 relate to 'Funding and Autonomy', Recommendations 3, 4 and 5 to 'Governance, Accountability and Performance', Recommendation 6 to 'Collaboration and Partnerships', Recommendation 7 to 'Human Resources'; and a final recommendation 8 to the need for a coordinated effort designed to make progress in addressing these priority areas.

While total investment in higher education in the EU is about 1.1% of GDP, on a par with Japan, this is below the level of key competitors such as Australia (1.5%), Canada (2.5%), USA (2.7%) and Korea (2.7%). Dedicated investment in R&D also remains a challenge, only 1.84 % of GDP in EU-27, and below the level in the USA, Japan or South Korea. The EG strongly believes that additional investment in Europe's universities is urgently required. Further public investment in universities is not a cost, but an investment in the development of the knowledge society and the future of Europe and the well-being of its citizens.

RECOMMENDATION 1

The EG supports the Commission's proposal in the Communication on the modernisation agenda for universities on the need to devote within a decade at least 2% of GDP (including both public and private funding) to a modernised higher education sector. This will require Member States to set out clear strategies and goals for investment over this period and to set out a process that can evaluate and monitor progress.

The ability to increase and diversify the sources of public and private funding depends on the level of financial and managerial autonomy given to universities. Recent research undertaken by the European think tank 'Bruegel' points to the positive correlation between research performance, greater autonomy and additional funding. Also, as stated in the 2007 European University Association (EUA) 'Lisbon Declaration', institutional autonomy is needed to accommodate the diverse institutional missions and should include academic autonomy (curricula, training programmes), scientific autonomy (research), organisational autonomy (university structure) and human resources management (recruitment, salaries and promotion).

RECOMMENDATION 2

In order to improve their research performance, universities should be given sufficient institutional autonomy, including financial and managerial autonomy, academic and scientific autonomy as well as organisational and staffing autonomy. This will allow them to face current and future societal and economic demands and redefine their missions and strategies accordingly.

Increased investment and institutional autonomy must go hand in hand with the setting up of mechanisms to ensure full transparency and accountability to society. This requires new governance systems and professional management of resources. The development of more robust cost accounting systems will help provide better

management and information as well as ensuring transparency and accountability. It will also help universities to achieve financial sustainability, through better informing their pricing strategies and their need to secure better cost recovery from both private and public sources of funding.

RECOMMENDATION 3

Universities need to adapt to operating in a more autonomous environment by strengthening transparency and accountability and demonstrating an efficient and effective use of funds. This will involve developing a better understanding of their research performance and costs, as well as achieving 'state of the art' governance and professional management structures. A commitment is also required on the part of public and private bodies that fund research in universities to better recognise the full costs of research they support or commission.

In order to improve the quality and relevance of university research performance, there is a need to develop adequate and appropriate assessment and quality assurance mechanisms for research, as well as a set of appropriate incentives to encourage universities to improve their research performance. The linking of research funding to performance is one way to do this, though should not neglect broad based research capacity or impede the development of new and emerging areas, where excellence cannot yet be demonstrated.

RECOMMENDATION 4

Member States should increase the focus on supporting the best research teams and individuals wherever these may be found, through mechanisms that can identify and fund excellence in research in relation to universities' variously defined research missions and strategies. However, this should not be done at the expense of the need for continuous support for broad based research capacity and the encouragement of new and emerging areas.

Universities should be able to differentiate their activities based on their own strengths looking for excellence and relevance in strategically selected areas or research domains at regional, national and/or international level. The EG believes that as well as developing incentives to strengthen research performance, it will be important to develop incentives to improve universities delivery wider missions such as excellence in education; enhancing knowledge exchanges across universities and research institutions; sharing information with the business community and public authorities (health, transport, etc.); advising the government; and sharing knowledge with the general public.

RECOMMENDATION 5

It is important that knowledge exchange with other research institutions and the business community, as well as knowledge sharing with the society at large, are recognised as being of strategic importance, serving the public interest. This means that incentives and funding mechanisms need to be developed to encourage universities to focus and differentiate their activities in the delivery of their interlinked missions and compete in different ways and environments.

The development of partnerships with other research institutions, technology centres and the business community – including both multinational research intensive companies and regional small and medium-sized enterprises (SMEs) – will bring further opportunities for universities to participate in the joint production of knowledge through the evolving 'open innovation' system and the opportunities that it offers for new collaborations to share the benefits of research results. However, these partnerships should not become formalised legal structures driven by political considerations that may lack the necessary flexibility to respond to constantly changing demands. The EU added value should be, therefore, that of a facilitator and not that of a regulator.

RECOMMENDATION 6

Collaboration and partnerships with other research institutions and the business community bring opportunities to universities to participate worldwide in the joint production and application of knowledge. It is therefore important to promote the conditions, mechanisms and incentives to encourage more structured partnerships that create synergies and enhance capacity across the research and innovation ecosystems.

Although the issues of mobility of researchers and development of research careers are analysed by another ERA EG on Researchers, the EG felt that it was important to emphasise the need for human resources development in universities. At present, in many European countries, structural rigidities, over-regulation by government bodies and lack of staffing autonomy present difficulties for the management of human resources at universities to achieve necessary reforms. Greater autonomy should allow universities to develop institutional strategies to enhance the career development of researchers and their conditions for recruitment and employment – and hence address the needs identified in initiatives such as the European Commission's Charter and Code for Researchers, the ERC Starting Grants and Marie Curie Actions.

RECOMMENDATION 7

Universities will need greater autonomy to reform rigid recruitment, compensation and promotion mechanisms. More effort will also be needed in the training and career development and funding of early-stage researchers, particularly post-doc level, and promoting both inter-sectoral and geographical mobility within and outside Europe to meet the opportunities offered by European funding schemes and employment opportunities in the global economy.

During the course of the work of the EG, the results of the public consultation on the ERA Green Paper were

taken into account. In addition, attention was given to the November 2007 Council Resolution on *Modernising universities for Europe's competitiveness in a global knowledge economy*, and the approval by CREST of a new OMC (Open Method of Coordination) initiative through the setting-up of an OMC Working Group on 'research active' universities.

RECOMMENDATION 8

We welcome the proposal for a CREST OMC Working Group to explore approaches to improve the excellence of research in universities. This should explore the reform of universities with regard to issues such as funding, autonomy, research performance and assessment, involving Member States and universities in an equal footing. In addition, a complementary, bottom-up policy coordination initiative through the OMC-NET instrument would allow preparatory work in advance of the practical implementation and take-up by universities of the agreed recommendations. Universities, Member States and EU institutions – in particular, Eurostat – should coordinate as to guarantee 'comprehensive, comparable and reliable data' on performance and costs indicators of Higher Education Institutions.

Table of Contents

Preface	4
Executive Summary	5
Introduction	10
1. The role and importance of universities	12
2. Areas where further action is needed.....	13
2.1 Funding and autonomy.....	13
2.2 Governance, accountability and performance	14
2.3 Collaboration and partnerships	16
2.4 Human resources.....	16
3. Concluding Remarks	18
Bibliography	20
Annex 1 - Composition of the Expert Group.....	21

Introduction

In the context of the follow-up of the ERA Green Paper, the mandate of the Expert Group on 'Strengthening research institutions with a focus on university-based research' was, as stated in the Terms of Reference:

- review and assess the current situation regarding strengthening research institutions with a focus on university-based research, providing an overview of recent initiatives, current challenges and existing trends;
- identify issues at stake which may require new policy initiatives;
- identify and develop a number of policy options to address these issues, as well as evidence justifying the need for such measures;
- assess the various policy options and their potential impact.

To carry out its remit, the EG has met on six occasions during the period July – December 2007. In addition, during the Lisbon Conference on the future of science and technology (8 – 10 October 2007), the interim report of the EG was presented and discussed with the stakeholders and policy makers. This report is based on the collective view of the EG but does not represent the official view of the Commission. The Commission provided all the necessary background material for the work.

The context

Europe has a rich and diverse research and innovation ecosystem made up of universities, research institutions, research and technology organisations as well as innovative businesses and industry that can respond flexibly to specific challenges at global, European, national and regional level. The first concern of the EG was to develop recommendations that are sensitive to this fact, which is considered to be a major strength.

All actors within this ecosystem play an important role in creating, exchanging and applying knowledge; ultimately ensuring we have a strong and prosperous Europe for all

of its citizens. This diversity represents a strength, as it provides a variety of institutions and programmes in the different EU Member States that can respond flexibly to specific research challenges at international, European, national and regional level. It also creates the potential for partnerships and collaboration to enhance capability and capacity as well as encouraging competition, which in turn promotes excellence.

Whilst there is some overlap in the respective roles and activities of universities and research institutions, the EG focused its remit on UbR because of universities' unique and interlinked missions in education, research and innovation, which lie at the heart of the 'knowledge triangle' and at the interface of the European Higher Education Area (EHEA) and the European Research Area (ERA).

Universities do not work in isolation; they form part of a diverse and complex research and innovation ecosystem made up of universities, research institutions, technological centres, businesses and regional and national governments. All these actors interact in the creation, exchange and application of knowledge for the production of goods and services relevant to society and the economy. The EG felt that the focus and emphasis of the Green Paper only partially recognises this dynamic innovation environment and the role and future potential of universities in stimulating it. Much more work is needed to explore greater synergies among the different parts of Europe's research and innovation ecosystems in order to achieve a supportive framework within which the different research institutions evolve, adapt and excel.

It is widely recognised that universities and research institutions are a primary source of new knowledge of public interest and significant providers of knowledge in support of business research and innovation. Universities also play an essential role in training researchers. However, as the Green Paper suggests, and as was highlighted in the Commission Communication of May 2006 on *Delivering on the Modernisation Agenda for Universities: Education, Research and Innovation*, in order to unlock their potential, more progress is needed in the modernisation, restructuring and opening of universities. Put simply, progress made in the reform and

modernisation of universities has not been rapid enough if Europe is to remain a leading knowledge society in the global context.

The European Commission Green Paper on the future of the European Research Area recognises the important role that universities and other research institutions play within this system and has initiated a timely debate on how their role and interactions can be further strengthened to ensure Europe remains competitive. The EG, one of a set of expert groups established to follow through on the Green paper's six main elements, was given the mandate of proposing recommendations aimed at research institutions, with the focus being on universities. The EG considered written input from key stakeholders representing the university and research and technology organisation

sectors and the results of the EC web-based consultation. Based on this input and members' contributions, this report identifies some of the key challenges in this area and proposes recommendations and further policy actions at institutional, national and European level.

The EG had to restrict itself to a limited number of high level key issues that it felt to be most important. So from the outset, the EG's main task has been to examine issues relating to universities, though relevant common or overlapping issues as they relate to other research actors are discussed. The EG would also like to stress that the different parts of Europe's research and innovation ecosystem must work to develop a greater understanding of each other's agendas and explore greater synergies, ultimately achieving a Europe within which different research institutions can adapt and excel.

1. The role and importance of universities

It is now widely recognised that knowledge generation and exchange are important 'drivers' of economic prosperity, as well as underpinning health, culture and social values across Europe. Within Europe, universities and other research institutions are both essential sources and channels of such knowledge. Universities play a crucial role in Europe's research and innovation efforts¹, employing more than one third of all researchers and undertaking four fifths of all basic research.

While there is a certain degree of overlap in the respective roles and activities of different research actors, and cooperation and collaboration is commonplace, universities have a unique role within the ERA. Universities undertake research as well as playing the major role in educating undergraduate students and developing and training the next generation of researchers. Universities also play an important role in translating knowledge into the economy through their graduates, the formation of partnerships with business and through consultancy expert advice to government and other public authorities. Universities within Europe focus increasingly on different missions concentrating their efforts depending on their strengths and regional, national and international initiatives and other 'drivers'.

Because of the diverse roles of universities they are increasingly important players in stimulating innovation. This might be through moving forward the research frontier, giving people the new skills for innovation, exchanging knowledge, and acting as a hub in an international network of knowledge or providing regional leadership². Linkages between academia, business, government and the public sector are widespread

and growing in many European countries and hence university research today is very much intertwined with the production of goods and services relevant to the economy and society. The focus within the Green Paper on strengthening research capability only partially recognises this dynamic innovation environment and the present role and greater potential of universities in stimulating this.

Several EU Member States are already making some progress towards strengthening investment in universities and R&D, recognising this crucial role they have. Universities are also already beginning to open up and align themselves to meet global challenges and competition through a process of reform and modernisation. From the university perspective this includes: governance reform; diversifying missions; enhancement in quality and innovation in course provision; focusing on excellence in research as well as enhancing the exploitation and commercialisation of that research; and developing collaborative activities with industry and other research actors. Universities are at the intersection of the ERA and European Higher Education Area, which has provided the context and impetus for taking much of this agenda forward.

However, as the Green Paper suggests, and as was highlighted in the Commission's 2006 progress report on growth and jobs, progress is slow and there remains a continued need to strengthen universities across Europe through a process of reform and modernisation, linking and building on ERA and EHEA developments currently underway.

1. Universities and innovation: the challenges for Europe, League of European Research Universities, November 2006.

2. Five ways universities drive innovation, UK National Endowment for Science Technology and the Arts (NESTA), September 2007.

2. Areas where further action is needed

In exploring how this agenda can be progressed further, the EG have identified four common areas where further action will need to be taken to strengthen universities to take on the challenges of the future, these are:

- Funding and autonomy
- Governance, accountability and performance
- Collaboration and partnerships
- Human resources

2.1 Funding and autonomy

Funding levels in globally competitive situation

A core problem is that European universities and research institutions are seriously under-funded in comparison to competitor economies. International economic, technological and scientific competition is increasingly driven by strategic investments in knowledge-intensive institutions and industries. Without increased investment in these sectors it will therefore become harder for universities and research institutions to compete internationally, or play a key role in driving economic and social prosperity at national and regional levels.

The need for increased autonomy was recently recognised by Member States in the Council Resolution of November 2007 on modernising universities: *'there is a need for universities to have sufficient autonomy, better governance and accountability in their structures to face new societal demands and to enable them to increase and diversify their sources of public and private funding in order to reduce the funding gap with the European Union's main competitors.'*

Turning specifically to universities, total investment in higher education in the EU is about 1.1% of GDP, which is on a par with Japan, but below the levels of key competitors such as Australia (1.5%), Canada (2.5%), the USA (2.7%), and Korea (2.7%). The European Commission has estimated that to close the investment gap with the USA, Europe would need to invest an additional €150 billion per year.³ Significantly, the Commission's Communication on the modernisation agenda for universities⁴ outlines the need to reduce the funding gap within a decade by aiming to devote at least 2% of GDP to higher education. Dedicated investment in R&D also remains a challenge. Recent figures from the Commission show that in 2005, only 1.84% of GDP was spent on R&D in EU-27 and it still remains at a lower level than in the US, Japan or South Korea.⁵

National strategies for investment

National governments that have not already done so will need to set out clear strategies for investment in universities and research institutions. At a European level, although the significant improvements in investment under Framework Programme 7 are very welcome, spending under the overall EU Budget would also need to properly reflect the importance of research and innovation to the future well-being of the EU.

The Expert Group believes strongly that additional public investment in universities and research institutions should not be viewed as a cost but as a necessary investment in the future of Europe and its citizens. The impetus, however, will also rest with the universities and other research institutions to demonstrate and promote the importance of their contribution to the European knowledge economy.

While significant additional public investment for universities is crucial and a matter of priority, the Expert Group is aware that income sources will also

3. Mobilising the brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy, European Commission, April 2005.

4. Delivering on the modernisation agenda for universities: Education, Research and Innovation, European Commission, May 2006.

5. Key figures 2007 on science, technology and innovation, European Commission, June 2007.

need to become diversified, with particular emphasis on increasing income from private sources through developing public-private partnerships and funding through philanthropic sources.

Autonomy – capacity for change and excellence in diverse missions

The ability to attract private income, and the effectiveness of any additional public income, however will rest on the level of financial and managerial freedom that universities and research institutions are given. The question of autonomy is, therefore, a crucial one. Although the situation differs sometimes quite significantly across EU Member States, many universities suffer from an over-emphasis on state intervention; and too little freedom to set their own budgetary priorities, remuneration levels for staff and to deal with their own recruitment. This lack of freedom inhibits the dynamism and responsiveness that is required if universities are to fully realise the crucial role they have within the achievement of the goals of the revised Lisbon agenda.⁶

Greater autonomy will enable universities to respond more effectively to economic and societal challenges across the full range of their activities. It will also mean they are able to develop as sustainable, diverse organisations. A recent report by the European economic think tank, Bruegel⁷, indicates that in universities there is a positive correlation between research performance and greater autonomy, and that greater autonomy increases the extent to which additional research funding improves performance. It is stressed that Europe's universities should become more autonomous with particular regard to budgets.

The critical aspects of autonomy

In April 2007, the EUA made a declaration that focuses on five themes critical to the future of European higher education.⁸ One of the key themes was the fundamental

importance of university autonomy. The declaration urged the governments to endorse the principle of institutional autonomy so as to accommodate diverse institutional missions and to include academic autonomy (curricula, programmes and research), financial autonomy (lump sum budgeting), organisational autonomy (the structure of the university) and staffing autonomy (responsibility for recruitment, salaries and promotion) as well as to benchmark progress against target levels set in relation to both autonomy and funding of universities.

In order to improve research performance it is essential that universities and research institutions be given greater financial and managerial autonomy. This will allow them to be adaptable and responsive to the changing demands of the economy and society.

2.2 Governance, accountability and performance

Effectiveness and efficiency

Increased investment and institutional autonomy for universities must also go hand in hand with the development of effective leadership, governance and management at the institutional level, as well as mechanisms that can ensure transparency and accountability of public funds. If the university and research sectors are calling for greater investment from public sources to support research and innovation, they will need to provide reassurance on the effectiveness and efficiency of this investment. Indeed, in its 'Lisbon declaration' chapter on autonomy, the EUA have stressed the importance of universities continuing to reinforce further their leadership capacity and strengthen professional management. It must be stressed that the responsibility for making progress on this front is shared between universities and Member States.

Although, for the purposes of this report, it is difficult to separate out the specific issues relating to the management of research and innovation from the

6. For example, although relative R&D expenditures in the Higher Education sector are higher in EU 25 (0.41% of GDP) than in US (0.31% of GDP), on average US universities are able to self-finance 19.3% of their research while EU universities only 3.9% (Eurostat data for 2004/3), which reflects the higher degree of financial autonomy and specialisation of US universities.

7. Why Reform Europe's Universities?, Bruegel, September 2007.

8. The Lisbon Declaration, Europe's universities beyond 2010: Diversity with a common purpose, EUA, April 2007.

wider issues of management within universities, there are specific actions that can be taken on this front. In universities, the development of more robust cost accounting systems for research will help provide management information for institutions and ensure transparency and accountability. It will also help Europe's university sector take more responsibility for being financially sustainable and give university leaders the information that they need to make key strategic and management decisions. Financial sustainability is a joint commitment that will also require both public and private sponsors of research to provide a sufficient level of resource to meet more of the full costs of the research that they support. National funding agencies and universities will need to work together to take this agenda forward.

The EUA has made this a key strategic priority and it will be important that the sustainability agenda is understood and promoted across Europe. The European Commission have recently set up an EG to explore this area further and identify recommendations to universities, Member States and at a European level. This EG fully endorses the work of the EUA and European Commission in this area.

The development of the new cost based approaches to funding within the rules for Framework Programme 7 has provided incentives for universities to develop processes whereby they can calculate their costs on a more robust and transparent basis. The EG believes it will be important to monitor the impact of the new FP7 eligible cost model, as an important driver in improving financial management in universities.

Performance management

As well as the development of more robust costing and pricing to support financial sustainability within universities, there needs to be a greater focus on enhancing performance through strengthening performance management and the creation of the right incentives. The EG believes that the development of performance evaluation and quality assurance mechanisms for research will have a key role to play in enhancing the performance management of research. It will also be important that appropriate incentives are developed that will encourage institutions to improve performance. The EG supports the planned activities at EU level to explore appropriate measures and sets of

adequate indicators that reflect the diverse nature of 'research-active' universities research missions.

Linking research funding to performance and to the allocation of core funding is one such method, although the Expert Group does not feel that this alone is the most appropriate way forward as it would not allow the diversity of missions to be developed and rewarded effectively. A delicate balance has to be achieved if the European research and innovation system is to remain dynamic. Whilst incentives must help create the necessary environment that will allow pinnacles of excellence to grow, this must not be at the expense of supporting broad based research capacity at the level of the system, or new and emerging areas. It is also important that the best research is funded wherever it is found, supporting the best researchers and teams.

Incentives for diversity of missions

The EG believes that as well as developing performance evaluation mechanisms and incentives to strengthen research performance it will be important to ensure excellence is supported and enhanced across an equally important range of activities, such as knowledge exchange and education. Not all universities can, or should, excel in all areas, but with a range of appropriate incentives and sufficient autonomy and funding they will have the freedom to focus on their strengths and regional, national or international requirements. Such a development should also lead to a redefinition of missions and strategies of several universities.

There is a debate to be had about the indicators that can be used, how broadly these are applied, and what this means for the allocation of limited public funds to different areas of activity. It will be crucial, however, that the higher education sector is proactive in taking this agenda forward and discussing and proposing appropriate measures. It is important that other aspects of university activity, such as knowledge transfer and consultancy advice, are recognised as equally legitimate and important.

In relation to competitive project and programme based funding, moves to develop a more competitive dimension to the funding of research through the Framework Programme, notably through the ERC, have been very welcome. It is clear that this is already having

an impact on the development of research strategies within universities. A question, however, remains as to whether the ERC is funded at the level really required to make a significant difference and whether more resources should be allocated from the EU budget. The EG would recommend increasing the budget of ERC substantially.

2.3 Collaboration and partnerships

The Green Paper envisages greater cooperation between research institutions themselves, with industry and internationally. Collaboration, cooperation and partnerships across these different dimensions are of course already extensive (for example, SINTEF in Norway and IMEC in Belgium). Many different actions for intensifying research collaborations involving both universities and other research institutions have also already been developed at the local, regional, national and European level. These initiatives contribute to closer cooperation and the development of complementary strengths between universities and research institutions and also include industry partners. The 'Responsible Partnering' guidelines for effective research collaboration between universities, other research institutions and business have also demonstrated the value of a voluntary approach based on existing good practices.⁹

The key challenge, therefore, is to identify and limit the legal or regulatory factors that may hinder further collaborative activities, and to further support and enhance these collaborative endeavours in a way that adds true value. The Green Paper tends towards a focus on more formalised approaches to the question of cooperation, envisaging networks with countries, regions or institutions specialising in particular areas. While the development of partnerships and collaborations should be encouraged and supported through mechanisms such as the Framework Programme, there is a danger that they can become an end in their own right or become formalised legal structures driven by political considerations that may lack the necessary flexibility to respond to new changing demands. The institutionalisation of partnership and

collaborations should therefore be avoided. The EU added value and role should be that of a facilitator, not that of a regulator.

Bearing in mind the points already made above, well-managed and funded autonomous universities will find it to be in their own interest to collaborate or develop partnership in order to compete internationally and develop their strategic focus (e.g. merging or achieving stable networks with others). Autonomy and enhanced funding are, therefore, essential preconditions to enhancing effective collaboration.

The EG underlines the value of joint efforts and collaboration on the European level regarding investment in large infrastructure for research, whether physical facilities or digital infrastructure. The issues relating to the development of these areas are being dealt with in another EG, so are not dealt with in this report.

2.4 Human resources

Although the issue of research careers and mobility is not explicitly within the remit of this EG, and is being covered by the EG on 'Realising a Single Labour Market for Researchers', this EG felt that it is important to consider the human resource issues that need to be addressed if Europe's universities are to be strengthened. People are central to a university and if Europe is to continue to compete we should strive to create the conditions that enable us to attract and retain the best people. The EG identified the need for changes on the system level and in national legislation as well as in university traditions and practices.

At present, due to structural rigidities and lack of autonomy in this area, academic employment practices within many European universities are far from ideal. Rigid compensation and promotion structures often make it difficult for universities to compete in an international academic market. Fortunately, there are some signs of change but much still needs to be done. The key issue in this regard is not always in relation to total budgets spent on salaries and compensations

9. Responsible Partnering – Joining Forces in a World of Open Innovation. A guide to better practices for collaborative research and knowledge transfer between science and industry. (EUA, EIRMA, EARTO and ProTonEurope, 2005).

(although in some countries this is an important constraint), but how they are allocated – in particular, how academic performance is rewarded. The issues that need to be considered here relate to a number of points raised elsewhere in this report, particularly the need for a greater focus on performance management and the need for enhanced autonomy.

The idea of creating a single market with attractive working conditions for men and women, with the absence of administrative obstacles to mobility is therefore something to be supported. *The European Charter for Researchers and the Code of Conduct for their Recruitment* outlines a number of the actions that would need to be taken in achieving this objective and has the potential to make significant progress towards a more open and competitive European Higher Education and Research Area.

Human resources are a key area where greater linkage is needed between the policy development of the European Higher Education Area and the ERA. Particularly, there needs to be a connection with the reforms underway as part of the Bologna '3rd cycle' dealing with doctoral training reform and the development of doctoral programmes and research careers. Strengthening the early stages of research careers will be central to achieving the ERA goals. This will require a well coordinated approach within the European institutions with policy interest in the different but related areas.

Greater autonomy should allow universities to develop institutional strategies to enhance the career development of researchers and their conditions of recruitment and employment – and hence address the needs identified in initiatives such as the European Commission's Charter and Code for Researchers, the ERC Starting Grants and Marie Curie Actions.

3. Concluding remarks

In exploring how the modernisation agenda of universities can be progressed further, the EG has identified a number of priority areas for action that cut across the nine areas identified in the Commission Communication on the modernisation of universities. It must be emphasised that a coherent strategy is needed and the actions proposed to address the issues identified should form part of this strategy.

The EG supports new developments, such as the November 2007 Council Resolution on *modernising universities for Europe's competitiveness in a global knowledge economy*, and the approval by CREST of a new OMC (Open Method of Coordination) initiative through the setting-up of an OMC Working Group on 'research active' universities, but draws attention to the

essential need for a more joined-up approach to avoid the risk of duplication of efforts. It is also important that a strategic cross-cutting approach is taken to maximise creative synergy across policy development relating to the building of both the EHEA and ERA.

The EG believes that further impetus could be given to the areas outlined in the above recommendations if a coordinated effort involving Member States and universities with the support of the European Commission could be put in place. The EG also emphasises that a more systematic and EU-comprehensive knowledge of the performance and costs of Higher Education institutions will help to gain transparency and to implement the above recommendations.

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Annex 1 - Composition of the Expert Group

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European Commission

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The overall objective of the Expert Group (EG) on ‘strengthening research institutions with a focus on university-based research’, launched in the context of the follow-up to the Commission’s Green Paper on The European Research Area: New Perspectives, was to identify and define possible measures and actions to strengthen research active universities. In its final report, the EG highlights some of the problems and challenges faced by universities, focusing on four key areas:

- Funding and Autonomy,
- Governance, Accountability and Performance,
- Collaboration and Partnerships,
- Human Resources.

It proposes 8 specific recommendations and further policy actions that can be undertaken at institutional, national and European level, to advance in the process of modernisation of the European’ universities.

