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EUROPEAN PLATFORM
HIGHER EDUCATION MODERNISATION

**ENGAGING IN THE MODERNISATION AGENDA
FOR EUROPEAN HIGHER EDUCATION**



EUROPEAN CENTRE FOR STRATEGIC
MANAGEMENT OF UNIVERSITIES

ENGAGING IN THE MODERNISATION AGENDA FOR EUROPEAN HIGHER EDUCATION

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ENGAGING IN THE MODERNISATION AGENDA FOR EUROPEAN HIGHER EDUCATION

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THE MODERN PROJECT

The new communication from the European Commission “*Supporting growth and jobs – an agenda for the modernisation of Europe’s higher education systems*” stresses the vital role of European higher education in developing human capital and driving research and innovation in the knowledge economy. The Commission emphasises once again the need to enhance the performance and international attractiveness of Europe’s higher education institutions. European higher education institutions need to modernise their governance and prepare their leaders to operate in increasingly complex sets of interactions at the institutional, regional, national and European level. European policies call for universities to play a strong role to achieve the objectives of the Lisbon Agenda and in making Europe a strong knowledge-based economy. Although the need to prepare university leaders, for increasingly complex positions is so obvious, the supply of management support to higher education institutions, their leaders and managers is highly fragmented in Europe.

The MODERN project, European Platform Higher Education Modernisation (www.highereducationmanagement.eu), is an open platform as a key instrument for innovation, state-of-the-art knowledge, dissemination of good practice and joint action on university leadership, governance and management for the professionalisation of the sector. MODERN contributes to raising awareness in European higher education institutions on the strong need to invest in people, to support potential leaders, and to encourage management training at all levels (junior and senior, academic and administrative staff), with as background the aim to ensure their competitiveness to respond to external challenges.

Under the leadership of ESMU, the European Centre for Strategic Management of Universities, MODERN is a consortium of 10 core and 31 associate partners joining forces through a Structural Network under the EU Lifelong Learning Programme (ERASMUS). All project partners are institutions and associations active in the field of higher education management.

MODERN has been mapping the supply of management development programmes and its adequacy to the demand, leading to the creation of a European online tool on short and long term programmes in higher education management in Europe.

The present report summarises the five thematic areas which MODERN focused on for their importance for the modernisation agenda: governance, funding, internationalisation and quality assurance, regional innovation, and knowledge exchange. It reviews them in the context of the new communication from the Commission.

The report was written by Paul Benneworth, Harry de Boer, Jon File, Ben Jongbloed & Don Westerheijden CHEPS, Center for Higher Education Policies, University of Twente, MODERN project partner.

The MODERN project further responded to the need for training in higher education by conducting a series of peer learning activities. These served as pilot initiatives to develop new types of learning for higher education institutions and their individual leaders.

I would like to thank all our partners in the MODERN project for their valuable contributions in developing our European platform. It is with their strong support and significant expertise that we have been building together a powerful tool to support the modernisation agenda and the further professionalisation of higher education in Europe.

Frans van Vught
ESMU President
MODERN project leader
January 2012

INTRODUCTION

In September 2011 the European Commission issued a communication (EC, 2011a) entitled “Supporting growth and jobs – an agenda for the modernisation of Europe’s higher education systems”. The point of departure of this communication is that “...education, and in particular higher education and its links with research and innovation, plays a crucial role in individual and societal advancement, and in providing the highly skilled human capital and the articulate citizens that Europe needs to create jobs, economic growth and prosperity. Higher education institutions are thus crucial partners in delivering the European Union’s strategy to drive forward and maintain growth.” (2011a; 2)

This new communication on the modernisation of European higher education echoes and builds upon themes developed in a series of earlier Commission communications and Council of the European Union resolutions stressing education, research and innovation as pillars of the Lisbon Strategy:

- Investing efficiently in education and training: An imperative for Europe (2003a);
- The role of universities in a Europe of knowledge (2003b);
- Mobilising the brainpower of Europe: enabling European universities to make their full contribution to the Lisbon Strategy (2005b);
- Delivering on the modernisation agenda for universities: Education, Research, and Innovation (2006);
- Modernising universities for Europe’s competitiveness in a global economy (2007)

The Commission’s latest communication stresses that “The main responsibility for delivering reforms in higher education rests with Member States and education institutions themselves. However, the Bologna Process, the EU Agenda for the modernisation of universities and the creation of the European Research Area show that the challenges and policy responses transcend national borders. In order to maximise the contribution of Europe’s higher education systems to smart, sustainable and inclusive growth, reforms are needed in key areas: to increase the quantity of higher education graduates at all levels; to enhance the quality and relevance of human capital development in higher education; to create effective governance and funding mechanisms in support of excellence; and to strengthen the knowledge triangle between education, research and business. Moreover, the international mobility of students, researchers and staff, as well as the growing internationalisation of higher education, have a strong impact on quality and affect each of these key areas.” (2011a;3)

The MODERN project, the European Platform Higher Education Modernisation, aims to create an open platform as a key instrument for innovation, state-of-the-art knowledge, dissemination of good practice and joint action on university leadership, governance and management for the professionalisation of the sector. MODERN aims to contribute to raising awareness in European higher education institutions on the strong need to invest in people, to support potential leaders, and to encourage management training at all levels (junior and senior, academic and administrative staff) to ensure their competitiveness to respond to external challenges – such as those posed by the Modernisation Agenda itself.

(For further information see: www.highereducationmanagement.eu)

This report is the last in a series of six reports to be published by the MODERN project on key issues related to current priorities in higher education management: governance, regional innovation, quality assurance and internationalisation, funding, and knowledge transfer. These five thematic reports, all written by staff members of the Center for Higher Education Policy Studies (CHEPS) of the University of Twente, the Netherlands (and all available on the MODERN web-site) are:

- Higher Education Governance Reforms across Europe: Harry de Boer and Jon File (2009)
- Funding Higher Education: A view across Europe: Ben Jongbloed (2010)
- Internationalisation and its quality assurance: Don Westerheijden (2010)
- University Engagement and Regional Innovation: Paul Benneworth (2010)
- Towards a Strategic Management Agenda for University Knowledge Exchange: Paul Benneworth (2011)

In selecting these five themes the MODERN steering committee focused on key policy areas identified in the Modernisation Agenda of 2007. The extracts from the September 2011 communication quoted above demonstrate that these themes remain highly relevant today. Our reports cover governance reform, funding reform, internationalisation and quality, and two central aspects of the knowledge triangle: knowledge exchange and regional innovation. So, while by no means providing an exhaustive coverage of all of the areas of the current modernisation agenda, our reports focus on many of its key components.

All five reports were written with a particular purpose in mind: as background resource materials for thematic MODERN conferences which would bring together university leaders and managers as well as providers and potential providers of higher education leadership and management development workshops and programmes to discuss the challenges that trends, policies and developments around the theme in question might create for university leaders and management. The outcomes of such discussions would form a valuable input into the development of new or improved management development activities.

This sixth and final report was envisaged to be an extended executive summary of the first five reports to provide an easily accessible and relatively concise overview of trends and developments across the five selected thematic areas. The publication of the September communication has however also provided an opportunity to explore the relevance of our analyses to the latest Modernisation Agenda. Our report will once again serve as background resource material for a (final) MODERN conference: “Engaging in the Modernisation Agenda for European Higher Education” to be held in Brussels on 30 January 2012.

The structure of this report is therefore straightforward: Part One is an attempt on our part to start a process of engagement with, and conference discussion about, the new modernisation agenda primarily from a MODERN perspective: from the angle of the five MODERN thematic areas and grounded in an interest in effective university leadership and management. Part Two contains the extended executive summaries of the five MODERN thematic reports (some needed to be more extended than others).

PART ONE:

REFLECTING ON THE MODERNISATION AGENDA FROM FIVE ANGLES

For more than three decades Europe's higher education systems have been under reform. Since the late 1990s the rate of change has accelerated to unprecedented levels, largely on the shoulders of two key developments: the Bologna Declaration (1999), whose objective is to make the European higher education systems more competitive and attractive and the EU's Lisbon Strategy (2000) and its successors, which seek to reform the continent's still fragmented higher education, research and innovation systems into a more powerful and more integrated, knowledge-based economy. While the diversity within European higher education is regarded as one of its major strengths, at the same time a common path towards transparency, quality, growth, efficiency and excellence is regarded a prerequisite for making Europe one of the strongest educational and economic leaders in the world. Higher education, research, innovation are seen as important pillars of a prosperous Europe.

1. EUROPE'S 2020 STRATEGY AND THE LATEST MODERNISATION AGENDA

Despite of all the reforms that have occurred, the European Commission believes that currently higher education's contributions to Europe's prosperity, to the creation of wealth and jobs and to its wider role in society are not sufficient. Therefore, the European Commission considers it absolutely necessary to further modernise European higher education in such a way that it can be the engine of European economic growth, competitiveness, innovation and social cohesion. While the EC acknowledges the member states' prime responsibility for education as well as the autonomy of higher education institutions, it sees a clear role for itself in developing a Europe of Knowledge through agenda setting; developing common goals and monitoring progress towards them; pushing particular initiatives; and funding. The EC monitors progress and supports the reform efforts of member states, including through country-specific recommendations and through EU funding programmes.

In terms of agenda setting the 'Europe 2020' strategy, launched in March 2010, heralds a new era¹ and has clear consequences for the modernisation agenda for higher education. The strategy follows on from the Lisbon Strategy (2000-2010) and sets three priorities: smart, sustainable and inclusive growth (EC; 2010). The headline targets are that by 2020:

- 1) at least 75% of the population aged 20-64 should be employed compared to 69% at present.
- 2) 3% of the EU's GDP (public and private combined) should be invested in R&D and innovation.
- 3) the '20/20/20' climate/energy targets should be met.
- 4) the proportion of early school leavers should be reduced to fewer than 10% from the current 15%; and the share of the population aged 30-34 who have completed tertiary education should have increased from 31% today to at least 40%.
- 5) 20 million fewer people should be on the verge of poverty and social exclusion (a reduction of 25%)

It is clear that particularly targets 2 and 4 are directly related to higher education and research and stress once more the EC's view that higher education and research are at the heart of Europe's future prosperity. To meet the five targets, seven flagship initiatives have been proposed (EC, 2010). The initiatives most linked to higher education are:²

¹ In the words of President Barroso: "2010 must mark a new beginning" (preface to the Europe 2020 strategy report)

² The other four flagship initiatives are 'Digital Agenda for Europe', 'Resource-efficient Europe', 'Industrial Policy for the Globalisation Era' and 'European Platform against Poverty'.

- the *Innovation Union*, launched on 6 October 2010, which aims to improve conditions and access to finance for research and innovation so as to ensure that innovative ideas can be turned into products and services that create growth and jobs. It also seeks to re-focus R&D so that it becomes more relevant to today's world, and centres on major challenges such as climate change, energy efficiency, health policy, and demographic change.
- *Youth on the move*, launched on 15 September 2010 and embracing both education and employment, which aims to enhance the quality and international attractiveness of Europe's higher education systems and to promote student and young professional mobility, as a means to prepare young people for today's job markets.
- An *Agenda for New Skills and Jobs*, launched in November 2010, which aims to bring together both 'work' and 'education' into one integrated lifelong learning process so as to improve employment and the sustainability of social models. It intends to do this by bringing businesses, employers, education and training closer together, so as to better match skills with the needs of the labour market. Regarding higher education, the Commission aims to widen access to education and to develop, with the help of businesses, outcome-based qualifications.

The ambitions for higher education are high and hard to achieve. The European Union acknowledges its limited competences with respect to higher education. Therefore, it 'invites' the member states to establish national reform programmes attuned to Europe's 2020 strategy. Close cooperation with the European Commission and promotion of collaboration between higher education institutions, research institutions and enterprises are called for. Policy learning, the Open Method of Coordination, reporting and monitoring (progress reports³ and country-specific guidance) should enable this.

The delivery of Europe's 2020 strategy requires improved quality and performance on the part of higher education institutions as set out in the agenda for the modernisation of higher education: "Supporting growth and jobs – an agenda for the modernisation of Europe's higher education systems" (EC, 2011a). To realise its high ambitions the EC argues that (more) reforms in key areas are needed. The reforms should aim at:

- an increase of the quantity of higher education graduates at all levels;
- an enhancement of the quality and relevance of human capital development in higher education;
- the creation of effective governance and funding mechanisms in support of excellence;
- a strengthening of the knowledge triangle between education, research and business
- the growing internationalisation of higher education

Each of these reform objectives are translated into concrete policy goals for 2020 resulting in an extensive list of goals as shown in the following box.

Box 1: Policy goals for European Higher Education in 2020

Increasing attainment levels to provide the graduates and researchers Europe needs.

- Develop clear progression routes from vocational and other education types into higher education (national qualification frameworks and recognition of learning and experience gained outside formal education and training).
- Encourage outreach to school students from underrepresented groups and to 'non-traditional' learners, including adults.
- Reduction of drop outs.
- Ensure financial support for potential students from lower income backgrounds.
- Train and re-train enough researchers in line with the Union's R&D targets.⁴

Improving the quality and relevance of higher education

- Encourage the use of skills and growth projections and graduate employment data (including tracking graduate employment outcomes) in course design, delivery and evaluation

³ The progress report on the Europe 2020 strategy published on 23 November 2011, indicates that the EU tertiary attainment rate has increased (from 32.3% to 33.6%) and that current trends suggest that the 2020 target of 40% could in fact be met (EC, 2011). The research and development target is more problematic with little progress foreseen in 2011.

⁴ The 2020 target of 3% of GDP spending on research implies a growth of 1 million research-based jobs.

- Adapting quality assurance and funding mechanisms to reward success in equipping students for the labour market.
- Encourage a greater variety of study modes by adapting funding mechanisms where necessary.
- Better exploit the potential of ICTs to enable more effective and personalised learning experiences, teaching and research methods (e.g. eLearning and blended learning) and increase the use of virtual learning platforms.
- Enhance the capacity of labour market institutions (including public employment services) and regulations to match skills and jobs, and develop active labour market policies to promote graduate employment and enhance career guidance.
- Introduce incentives for higher education institutions to invest in continuous professional development for their staff, recruit sufficient staff to develop emerging disciplines and reward excellence in teaching.
- Link funding for doctoral programmes to the Principles for Innovative Doctoral Training.

Strengthening quality through mobility and cross-border co-operation

- Encourage institutions to build learning mobility more systematically into curricula, and eliminate unnecessary barriers to switching institutions between bachelor and master levels and to cross-border co-operation and exchanges.
- Ensure the efficient recognition of credits gained abroad through effective quality assurance, comparable and consistent use of ECTS and the Diploma Supplement, and by linking qualifications to the European Qualifications Framework.
- Improve access, employment conditions and progression opportunities for students, researchers and teachers from other countries.

Making the knowledge triangle work: Linking higher education, research and business for excellence and regional development

- Stimulate the development of entrepreneurial, creative and innovation skills in all disciplines and in all three cycles, and promote innovation in higher education through more interactive learning environments and strengthened knowledge-transfer infrastructure.
- Strengthen the knowledge-transfer infrastructure of higher education institutions and enhance their capacity to engage in start-ups and spin-offs.
- Encourage partnership and cooperation with business as a core activity of higher education institutions, through reward structures, incentives for multidisciplinary and cross-organisational cooperation, and the reduction of regulatory and administrative barriers to partnerships between institutions and other public and private actors.
- Promote the systematic involvement of higher education institutions in the development of integrated local and regional development plans, and target regional support towards higher education-business cooperation particularly for the creation of regional hubs of excellence and specialisation.

Improving governance and funding

- Encourage a better identification of the real costs of higher education and research and the careful targeting of spending, including through funding mechanisms linked to performance which introduce an element of competition.
- Target funding mechanisms to the needs of different institutional profiles, to encourage institutions to focus efforts on their individual strengths, and develop incentives to support a diversity of strategic choices and to develop centres of excellence.
- Facilitate access to alternative sources of funding, including using public funds to leverage private and other public investment (through match-funding, for example).
- Support the development of strategic and professional higher education leaders, and ensure that higher education institutions have the autonomy to set strategic direction, manage income streams, reward performance to attract the best teaching and research staff, set admissions policies and introduce new curricula.
- Encourage institutions to modernise their human resource management and obtain the HR Excellence in Research logo and to implement the recommendations of the Helsinki Group on Women in Science.

It is obvious that the EC expects a lot from both national policy makers, institutional leadership, higher education professionals, students and other stakeholders. The EC itself aims to contribute by means of providing incentives to increase transparency, diversification, mobility and cooperation. In fact, the EC announces no fewer than 18 initiatives to play its part in realising the ambitious goals of the modernisation agenda (see box 2).

Box 2: Contribution of the EC to the modernisation of European Higher

The EC's contribution to the modernisation of Europe's higher education

1) Supporting reform through policy evidence, analysis and transparency

- Launch U-Multirank: a new performance-based ranking and information tool for profiling higher education institutions, aiming to radically improve the transparency of the higher education sector.
- Improve data on European higher education learning mobility and employment outcomes, and work towards a European Tertiary Education Register.
- Provide specific guidance and recommendations on raising basic and transversal skills and overcoming skill mismatches.
- Analyse the impact of different funding approaches on the diversification, efficiency and equity of higher education systems, as well as on student mobility.

2) Promoting mobility

- Improve the recognition of studies abroad, by strengthening the European Credit Transfer and Accumulation System (ECTS), proposing incentives in EU programmes to improve implementation, and working through the Bologna Process.
- Propose an Erasmus Masters Degree Mobility Scheme (through a European-level student loan guarantee facility) to promote mobility, excellence and access to affordable finance for students taking their Masters degree in another Member State regardless of their social background.
- In the context of the EHEA, contribute to strengthening synergies between the EU and intergovernmental processes.
- Support the analysis of the potential of student mobility flows, including within the Bologna process, to take into account the judgements of the European Court of Justice, and of Quality Assurance standards to support the quality of franchise education.
- Promote the European Framework for Research Careers to foster cross-border researcher mobility, helping researchers to identify job offers and employers to find suitable candidates, profiling research posts according to four levels of competence

3) Putting higher education at the centre of innovation, job creation and employability

- Adopt by the end of 2011 a Strategic Innovation Agenda designing the future of the EIT, its priorities, and proposal for new KICs to be launched.
- Build on the pilot project recently launched to strengthen the interaction between universities and business through the knowledge alliances
- Strengthen within the Marie Curie actions a European Industrial PhD Scheme in order to support applied research
- Propose a quality framework for traineeships to help students and graduates get the practical knowledge needed for the workplace and obtain more and better quality placements. It will also create a single and centralised platform for traineeship offers in Europe

4) Supporting the internationalisation of European higher education

- Promote the EU as a study and research destination for top talent from around the world, by supporting the establishment and development of internationalisation strategies by Europe's higher education institutions.
- Develop relations on higher education with partners beyond the Union, aiming to strengthen national education systems, policy dialogue, mobility and academic recognition, including via the Enlargement strategy, the European Neighbourhood Policy, the Global Approach to Migration, and the Bologna Policy Forum.
- Make use of existing Mobility Partnerships to enhance and facilitate exchanges of students and researchers.

- Consider proposing amendments to the students and researchers Directives, to make the EU even more attractive to talent from non-EU countries, and examine whether the processes and the accompanying rights should be facilitated and/or strengthened.
- Strengthen the tracking of non-EU doctoral students as a percentage of all doctoral students, as indicated in the Performance Scorecard for Research and Innovation to measure the attractiveness of EU research and doctoral training to the rest of the world.

With respect to funding, the EC has proposed a substantial increase for education and research budgets. To simplify the funding streams and to facilitate the collaboration between various domains (education, research, employment, entrepreneurship, migration and cohesion), the Multiannual Financial Framework 2014-2020 has three main funding mechanisms: Education Europe: the single programme for education training and youth; Horizon 2020: the Framework Programme for Research and Innovation; and the Cohesion Policy instruments.

2. GOVERNANCE AND THE MODERNISATION AGENDA

MULTI-LEVEL MULTI-ACTOR GOVERNANCE

With respect to Europe's 2020 strategy the Council and the Commission endorse the principle of subsidiarity – “real action” must be taken by the Member States, the higher education institutions, academic communities and other stakeholders. The European Commission proposes that the goals of the European Union are translated into national targets and trajectories (EC, 2010, p.3). The principle of subsidiarity is also key in the Modernisation Agenda: “The main responsibility for delivering reforms in higher education rests with the Member States and the education institutions themselves” (EC, 2011a, p.3). The European Commission's role is one of agenda setter, funder and facilitator.

In pursuit of the EU 2020 strategy, the Commission identifies key policy issues for the Member States and the higher education institutions in the area of governance (such as more institutional autonomy and professional leadership – see BOX 1). However, none of the 18 contributions of the European Commission itself are directly related to governance in higher education (see BOX 2). Thus, while the EC proposes what the Member States and institutions should aim for in terms of improved governance, it does not indicate how it will actually support these reforms. The governance ball is clearly in the corner of national governments and the institutions.

FOLLOWING THE SAME PATH

In setting the direction of governance reforms the most striking observation of the 2011 Modernisation Agenda in the area of governance is that it is a continuation of the 2006 policy goals for governance reform. In BOX 3 we see the governance aspects of the Modernisation Agenda 2006. The latest version of 2011 follows exactly the same path and logic.

Box 3: Governance aspects of the modernisation agenda in 2006

States should avoid over-regulation and micro-management of the HE system. They should guide universities through a framework of general rules. States should focus on the strategic orientation of the system as a whole.

Institutional autonomy should be enhanced and universities should accept full institutional accountability to society at large for their results. Universities should be responsible and accountable for their programmes, staff and resources. Institutional autonomy is a pre-condition to adequately respond to changes.

Universities should develop new internal governance structures. Empowering universities to take and implement decisions effectively requires top-level leadership and management with sufficient powers. There also should be effective external representation in university decision making.

Universities should overcome internal fragmentation. Institutional strategy setting and the professionalisation of leadership and management are recommended.

In state-university relationships multi-year agreements ('contracts') between state or regional governments and universities, setting out agreed strategic objectives, are suggested.

States should encourage their universities to develop structured partnerships with the business community (to contribute to economic development, improve the career prospects of researchers, increase the relevance of education programmes, create more possibilities for patenting and licensing, and develop additional sources of funding).

In a world of increased competition, universities need to be in a position to attract the best academics and researchers, to recruit them by flexible, open and transparent procedures, to guarantee full research independence and to provide staff with attractive career prospects.

The EC's reasoning in the 2011 Modernisation Agenda is as follows. Governance systems should be more flexible and should balance greater institutional autonomy with accountability to all stakeholders (EC, 2011a, p. 9). The assumption is that autonomous organisations can specialise more easily, promoting educational and research performance and fostering diversity within higher education systems. Institutions must pursue excellence in line with their missions and strategic priorities, for which institutional autonomy is a prerequisite. Legal, financial and administrative restrictions limiting the capacity of institutions to take such strategic decisions should be removed. This would not only allow institutions to develop their strategies and to differentiate themselves from others, but also would increase the efficiency of the institutions.

Member States should break down the barriers that prevent institutions to take full responsibility. Institutions are supposed to successfully use the powers granted to them, which implies they should improve their management capacity. More autonomy and greater accountability place new demands on senior management within higher education institutions and this "in turn calls for a professionalization of the management within institutions, including through training" (EC, 2011b, p. 49). Strategic leadership development, professionalised management and modern human resource policies and practices are deemed necessary to develop and implement strategic, institution-wide policies that aim for high-level quality service delivery and efficient use of resources. Many governance reforms in European higher education over the last decade have been in line with the EC's goal to enhance institutional autonomy. Though varying from one country to another, "institutional autonomy has grown overall, creating opportunities for public universities to act as more integrated organisations and to determine their own profiles and strategies" (CHEPS-consortium, 2010, p. 12). And in terms of internal governance structures, almost across the board we have witnessed a strengthening of the position of university executive leadership and the introduction of new governing bodies (with external representation). In this respect, it seems that governments and institutions have acted in accordance with the governance template set out by the Commission. This however is only one part of the story.

Studies in higher education also reveal that in many countries institutions face limitations on their managerial flexibility particularly in terms of internal governance arrangements and their ability to select staff and students. Moreover, their autonomy is bounded because institutions remain to a large extent dependent on public funding and, in trying to realise national agendas for higher education, states are developing new steering devices that can be as constraining as traditional modes of steering. There is still considerable national power in determining regulatory frameworks and incentive structures; national governments still play an active role in shaping higher education systems and institutions.

Despite many governance reforms during the last decade, the EC believes that further reforms are needed if higher education is to contribute to economic and social well-being in Europe. This is evident in the title of section 2.5 of the 2011 modernisation agenda: *'Improving governance and funding'*.

THE SAME PATH, THE RIGHT DIRECTION?

In terms of governance, the 2011 Modernisation Agenda continues to stress the broad package of reforms and policy goals outlined in 2006. However it acknowledges that there is no 'one size fits all' model for governance. National and institutional particularities make it hard to identify a single blueprint for successful governance. An important area for further debate and research is whether and how member states have attempted to find their own tailored solutions to the broad governance framework favoured by the EC; and what have been the effects of these reforms.

One could argue that there is no need for the European Commission to change the governance components of the Modernisation Agenda as long as governance reforms in European higher education systems move in the general direction that the Commission desires (which by and large appears to be the case). Provided of course that the European Commission holds the view that this is the right way to go.

Alternatives and potential risks and warning signs should however be part of the debate. Research demonstrates that more institutional autonomy tends to travel with more accountability. To ensure this accountability sophisticated measuring, monitoring and reporting mechanisms have been put in place and these 'modern' control technologies may limit the institutions' space to move (particularly in combination with financial dependency on the public budget). Moreover, it seems that the devolution of state powers may lead to re-regulation instead of de-regulation; a shift from micro-management by the state to micro-management by empowered institutional leadership.

The effects of such a shift are largely unknown. Though the consequences of empowered institutional leadership, combined with new accountability measures, are not clear, academics, at least in particular disciplines, fear a loss of academic freedom (Meek, 2003, 7). Professional autonomy used to imply control over their work, meaning both the academic and non-academic processes. Losing power over non-academic affairs (the organisation of teaching and research) could have repercussions for core academic processes (professional culture). Convincing proof on the effects of (micro-) managerialism on institutional performance is unavailable. In fact, there is a lack of empirical evidence for a link between autonomy and performance (not only in the world of higher education). At best there is some circumstantial evidence suggesting that financial and human relations autonomy are associated with particular performance indicators. Once again there is a clear need to revisit the discussion about the desired balance between autonomy and accountability and to devise new ways of teasing out their relationship with different aspects of higher educational performance.

Another assumption of the European Commission is that greater institutional autonomy is a prerequisite for higher levels of institutional diversity within higher education systems. A diversified European higher education landscape is seen as a strength. In granting higher education institutions more autonomy, the policy expectation is that institutions will use this enlarged space to develop particular profiles that distinguish them from each other. In response to EU policies presented in various communications, the development of institutional profiles will enable HEIs to identify and build on specific institutional strengths, specialisations and orientations. In this way HEIs can contribute to the realisation of the goals of EU policies in the area of higher education, research and innovation (van Vught, 2011, p. 78). Moreover, clear institutional choices could contribute to the transparency of a diversified higher education and research landscape in Europe and could have added value in demonstrating institutional performance across different core tasks.

It is equally possible that institutions will use their increased autonomy to make the same kind of choices (isomorphism), resulting in a more homogeneous instead of a more heterogeneous higher education landscape. This tendency becomes more likely when systems are increasingly rewarded using mainly mono-dimensional (research productivity) indicators to measure success ('rankings' or performance-based funding schemes). This is another important area for discussion and further study.

3. FUNDING AND THE MODERNISATION AGENDA

In particular during times of financial crisis, there is a realisation amongst national governments that their already overstretched public budgets can no longer fully meet the financial demands of continuously expanding higher education systems. This requires both new financial steering instruments and diversification of resources. Partly as a result of this, many countries have reviewed or are reviewing their higher education funding systems, with many having implemented some kind of reform. Some reforms target funding mechanisms driving public funds allocated to HEIs (*institutional funding*), to encourage HEIs to operate more efficiently, or to seek private funding by working more closely with the private sector. Other reforms target students via mechanisms for raising tuition fees or awarding student support (the idea of cost sharing), which is also related to the issue of *rates of return* to higher education. In this section we discuss these funding reform initiatives in relation to the recent EC Modernisation Agenda.

THE 2006 MODERNISATION AGENDA

The European Commission's 2006 Modernisation Agenda has acted as the major European policy document concerned with higher education reform. BOX 4 lists the funding-related elements of this agenda but not recommendations related to governance and curriculum reform.

BOX 4: Funding aspects of the 2006 Modernisation Agenda

Ensure real autonomy and accountability for universities. Universities should be responsible and accountable for their programmes, staff and resources. Institutional autonomy is a pre-condition to adequately respond to changes

Provide incentives for structured partnerships with the business community. Structured partnerships contribute to economic development, improve the career prospects of researchers, increase the relevance of education programmes, create more possibilities for patenting and licensing, and can bring additional funding

Reduce the funding gap and make funding work more effectively in education and research. As put forward in its Annual Progress Report on the Lisbon Strategy, the Commission proposes that the EU should devote at least 2% of GDP (including both public and private funding) to a modernised education sector

States should examine their current mix of student fees and student support schemes in the light of actual efficiency and equity. Free access does not necessarily guarantee social equity. Money spent on obtaining university qualifications pays returns higher than real interest rates. Student support schemes today tend to be insufficient to ensure equal access and chances of success for students from the least privileged backgrounds

University funding should be focused on relevant outputs rather than on inputs. Funding should be adapted to the diversity of institutional profiles. Research-active universities should not be assessed and funded on the same basis as others weaker in research but stronger in integrating students from disadvantaged groups or in acting as driving forces for local industry and services. Apart from completion rates, average study time and graduate employment rates, other criteria should be taken into account for research-active universities: research achievements, successful competitive funding applications, publications, citations, patents and licences, academic awards, industrial and/or international partnerships, etc

States should strike the right balance between core, competitive and outcome-based funding (underpinned by robust quality assurance) for higher education and university-based research. Competitive funding should be based on institutional evaluation systems and on diversified performance indicators with clearly defined targets and indicators supported by international benchmarking for both inputs and economic and societal outputs

Break down the barriers around universities in Europe. National grants/loans should be fully portable within the EU

The funding-related recommendations included in the 2011 Modernisation Agenda (EC 2011a) are very much a continuation of the ones contained in the 2006 version listed in Box 4. Once again, alternative sources of funding are to be promoted. The 2011 Agenda also calls for increased private funding and facilitating access to alternative sources of funding (alongside public sources). It sees a potential role for public funds in leveraging private and other public investment (through match-funding, for example). The diversification of funding sources is once again one of the key recommendations, along with the creation of partnerships between higher education institutions on the one hand and research institutes, businesses, and regional authorities on the other.

The reshaping of funding arrangements called for by the EC encompasses a wide range of aspects. Three of the most pressing questions that feature prominently both in the European Commission's 2006 and its 2011 Modernisation Agendas, are:

1. Who pays for higher education? What is the extent of cost-sharing in higher education and external funding to universities?
2. How is public funding allocated to higher education institutions? What incentives are implied by the various allocation mechanisms? For instance, are there any direct links between the results achieved by the institutions and the amount of public funding they are allocated?
3. How much autonomy do higher education institutions have for managing their financial resources, leading to a diversification of funding sources as well as the creation of partnerships with research institutes, businesses, and regional authorities.

The Modernisation Agenda states that investment in higher education in Europe is currently too low and more flexible governance and funding systems are needed. For this, the incentives of current funding mechanisms would need to be reconsidered. In terms of governance (see above), the Modernisation Agenda emphasises the need to reduce restrictions for higher education institutions to raise private revenues, to engage in capital investments and have full ownership of infrastructure. Autonomy is also to be increased in terms of the freedom to recruit staff. Along with the funding reforms, the governance reforms are meant to ensure that higher education institutions can set their own strategic direction. Part of the latter is to target funding mechanisms to the needs of different institutional profiles and to encourage institutions to focus efforts on their individual strengths and possibly to develop centres of excellence.

WHO PAYS?

Starting with the first issue listed above, an important pre-requisite for high quality higher education is to have in place sustained and efficient investment in the higher education sector and its students. As shown in Table 1, the proportion of national income Member States spend on higher education varies considerably, as does the relative balance between public and private spending. In 2008, the average level of direct spending⁵ on higher education in the EU, public and private spending combined, was 1.3% of GDP. A majority of expenditure on higher education comes from the public purse, although private expenditure is far from insignificant, rising to 0.7% of GDP or above in Denmark, Bulgaria, Cyprus and the UK. Spending on higher education in the EU is considerably lower than in the US, where total (private and public) investment amounted to 2.7% of GDP in 2008.

⁵ Direct public spending, covers spending on institutions, including on research and development, but excludes student support.

Table 1: Direct public and private spending on higher education as % GDP (2008)

% of GDP	Direct public spending	Private spending	Direct public + private spending
Denmark	1.57	0.7	2.27
Cyprus	0.91	0.89	1.8
Finland	1.62	0.08	1.7
Latvia	0.92	0.72	1.64
Romania	1.08 (2007)	0.53 (2007)	1.6 (2007)
Netherlands	1.07	0.47	1.54
Bulgaria	0.83	0.69	1.53
Poland	1.03	0.5	1.53
Sweden	1.36	0.17	1.52
Belgium	1.19	0.3	1.5
France	1.15	0.32	1.47
Ireland	1.14	0.24	1.38
Lithuania	0.89	0.44	1.33
Austria	1.12	0.2	1.32
EU-27	0.92	0.39	1.3
Portugal	0.81	0.49	1.3
Germany	0.98	0.25	1.23
Spain	0.96	0.26	1.22
UK	0.39	0.83	1.22
Estonia	0.96	0.26	1.21
Czech Republic	0.92	0.27	1.2
Slovenia	0.93	0.18	1.11
Hungary	0.87	0.3 (2006)	1.1 (2006)
Italy	0.67	0.41	1.08
Slovakia	0.62	0.44	1.06

Source: Eurostat (UOE data collection) No data for Greece, Luxembourg and Malta

Diversifying income will be a major challenge. The Modernisation Agenda sees a large potential for HEIs to generate resources from (alliances with) the private, business sector, from international fee-paying (full cost?) students and from an expansion of further education, part-time programmes, non-degree provision and other atypical activities. All of this will require professionally managed higher education institutions and will expose the sector to higher degrees of competition. And with government budgets getting tighter, it may also imply more competition for less research money. Some of the adverse effects of a diversification of revenues may be that the higher education sector may be seen as not needing public support and this could offer governments an excuse to (further) cut back the public budget allocated to the sector.

There is indeed evidence of a diversification in the funding sources drawn on by higher education institutions. A study (CHEPS Consortium 2010b) found higher education institutions in 14 countries receive more than 25% of their revenues from “third party” funds (i.e. not directly from public sources). This trend appears to be well established and intensifying, even in countries where public investment in higher education is growing, such as Germany. The ability of institutions to draw increasingly on alternative sources of funding in part reflects increasing levels of financial autonomy. Funding data show that universities, generally, have less than 10 % of their budget coming from industry (De Dominicis, 2010).

Over the last decade, more countries have either introduced or raised tuition fees for individuals or at least started a policy discussion on the topic, even though public funding is and is likely to remain the dominant source of investment in most EU countries. The expansion of higher education systems over the last decade, combined in some cases with increased pressure on public finances and evidence about the high individual returns of higher education, has led to an ongoing debate about the appropriate balance between public and private investment in higher education. In the belief that higher education graduates appropriate most of the gains of university education a case is made for raising tuition fees. The 2006 modernization agenda raises the issue of the necessity of cost-sharing (Teixeira et al. 2006). The Communication suggests that member states should ‘critically examine their current mix of student fees and support schemes in the light of their actual efficiency and equity’, pointing to the positive rate of return as justifying increasing investment levels.

Pressure on public finances is one of the factors underpinning a trend toward the introduction or increase of tuition fees in the EU. Tuition fees are an important source of private funding for higher education in some Member States, while others charge no tuition fees to national and EU students. A recent Eurydice study (Eurydice, 2011) provides an overview of current levels of tuition fees and student support in the EU. It confirms the picture in the earlier study (CHEPS Consortium, 2010b) that tuition fees for Bachelor-level students are relatively low across Europe, even though some countries have started to introduce fees in recent years. The diversity of tuition fee and student support systems around Europe is striking. On average, the fees for Master's level students are higher, particularly in the UK, Ireland, Greece, Cyprus, Malta and Spain. In a few countries, differentiated fees are in place (Italy, Spain, Portugal, UK-England), sometimes with governments setting a minimum and maximum level. On average, the share of tuition fees in the total income of higher education institutions increased from 8% in 1995 to about 12% in 2008 (CHEPS Consortium, 2010b).

The debate around fees amongst others touches on the issue of the level of the fee, whether variable fees (e.g. for Master's level students) should be allowed, or whether a mechanism should be introduced that allows students to defer the payment of the fees until later – for instance to have the student contribution financed through taxation. The ability that higher education institutions have or do not have to set fees and decide on their amount relates to the issue of financial autonomy. Debates on appropriate fee levels and public spending levels are to some extent informed by information on the magnitude of the social and private returns to investment in higher education. Sufficiently high returns will create incentives to expand enrolment and increase total investment. A question that needs to be asked though is whether the private and social returns to investments in higher education will be impacted by the economic crisis.

To guarantee access for all qualified students, a system of fees would have to be combined with government-sponsored income-contingent study loans – augmented with scholarships (grants) for students from lower socio-economic groups in society. Most countries have means-tested grants for undergraduate students. This coincides with the fact that students are mostly regarded as dependent on their parents. The latter may imply that in some countries students' parents may qualify for tax relief or child allowances. Some countries have only recently introduced a student loans system (Bulgaria, Hungary, Poland, Portugal, Slovenia), while others still lack such a system. At present, two-thirds of the countries have loan systems in place, with some charging a market-based interest rate and other setting the interest rate at the rate of inflation.

HOW IS PUBLIC FUNDING ALLOCATED?

The balance between public and private revenues is only one of the funding issues touched upon in the Modernisation Agenda. Another is the mechanisms for public funding and – in particular – the incentives implied by these systems. The Modernisation Agenda calls for an increased orientation of funding on performance and introducing more elements of competition.

With respect to the latter one can see a trend towards the use of competitive funding mechanisms by public authorities. These competitive funding methods include specific funding schemes, such as the Excellence Initiative in Germany, as well as less high profile changes to research funding allocations. The 2010 CHEPS Consortium study found that in nine out of 33 European countries surveyed, universities receive a high share of competitive research funds, accounting for over 25% of combined core funds and research budgets.

Two other trends are performance contracting and performance-based budgeting (PBB). Both are reshaping the relationships between the national authorities and higher education institutions. Performance-based budgeting seeks to link performance measures to budget allocations and as such is expected to improve the management and accountability of higher education institutions. It is also expected to contribute to a higher degree of cost consciousness and goal orientation in the budgeted organisation (Herbst, 2007). The idea is that well-performing institutions receive more income than lesser performing institutions, which would provide high performers with a competitive edge and would stimulate less performing institutions to perform.

Contracting is another trend. In addition to emphasising accountability and results, it gives greater attention to differentiated institutional missions. Institution-specific performances and initiatives can be laid down in contracts agreed between budget holders and budget receivers (Salmi and Hauptmann, 2006). Performance contracts are agreements negotiated between governments or buffer bodies and higher education institutions where all or a portion of funding is based on whether institutions meet the requirements in the contracts. The agreements can be prospectively funded or reviewed and acted upon retrospectively. Given that the EC's Modernisation Agenda would like to see funding mechanisms targeted to the needs of different institutional profiles in order to encourage institutions to focus on their individual strengths and make strategic choices, the trend towards performance contracting is very much in line with this Agenda. This does not mean that performance contracts are without potential problems. Indeed, such contracts may invoke quite some bureaucracy and run into problems of how to allow for context-specific factors that affect an institution's performance.

With performance budgets and contracting becoming more prominent across Europe, one question to ask is whether they can help to improve performance. A highly-cited study by the Breughel Group has indicated that it does seem to have a positive impact (Aghion et al., 2009). While performance-based funding for research seems promising in this respect (see CHEPS Consortium, 2010b), such funding mechanisms may be risky. If performance targets are set for public organisations, performance budgeting may start resembling a system of centralised planning, with little respect or acknowledgement for the professionals at 'shop floor level' and even leading to counterproductive behaviour (de Bruijn, 2006). If performance budgeting is formula-based, it may lead to unintended and perverse effects as the budgeted organisation may be tempted to only focus on what is measured, thereby disregarding other valuable, often qualitative aspects of the output. It may be inclined to focus on 'easy targets' ('cherry picking'), neglect innovations, and work in isolation (competition instead of collaboration) (Behn, 2003).

Yet, there is evidence that performance-orientation is increasing in European higher education systems (CHEPS Consortium 2010b). The question which then follows is which performance criteria feature in the funding mechanisms? Is it students' results (such as: the number of BA and MA degrees) or the results from national evaluations of teaching quality (e.g. from peer reviews or accreditation exercises) or national research assessments? Recently some Scandinavian countries have started to use the number of academic research publications as a funding criterion.

HOW MUCH FINANCIAL AUTONOMY?

Funding mechanisms are important instruments in shaping quantity and quality of higher education outcomes and promoting competition and institutional diversity. However, equally important is the issue of institutional autonomy. Higher education institutions need autonomy to compete for research funding, excellent researchers and students, and to be able to respond faster to a more competitive environment. More autonomy, in principle, enables institutions to better compete for (research) funds and diversify their funding portfolio, and to improve their research performance (Aghion et al., 2009, European University Association, 2008). Although an excessive dependence from short-term projects and funds obtained on a competitive basis might preclude universities from developing long-term strategies, financial autonomy appears to be essential for European universities in order to act quickly and effectively in a constantly changing environment (European University Association, 2009). A study for the EC illustrated that universities with a high degree of autonomy are the ones that have the most diversified budget (De Dominicis, 2010).

The findings from the CHEPS Consortium study suggest that funding policies matter for some areas of higher education performance, particularly if they go along with sufficient levels of autonomy for the higher education institutions. There appears to be a link between the output of the primary processes (numbers of graduates and articles published) on the one hand and the funding and autonomy conditions on the other. This conclusion is supported by other research (e.g. Aghion et al., 2009). For performance dimensions that are not related or less directly related to the primary processes of higher education institutions, performance is explained more by a combination of other factors, such as societal developments, economic conditions and political cultures. Such findings suggest that one cannot expect funding policies to be a recipe for all defects. Some funding reforms may only work in an indirect way – such as reforms that increase the financial autonomy of institutions.

The links between funding, governance and performance may exist only in specific contexts. What works in one country may not work in another. Nevertheless, many interesting country-specific examples of a positive interaction between funding reforms and performance exist, but more detailed research on a less aggregate level is needed to draw firm conclusions on what matters most in funding.

4. INTERNATIONALISATION AND THE MODERNISATION AGENDA

In the Modernisation agenda of 2011, the European Commission assigns an important role to internationalisation of higher education. Internationalisation and especially mobility is seen to have ‘a strong impact on quality and affect each of ... [the] key areas’: to increase higher education graduates in the workforce; to enhance quality and relevance of human capital development in higher education; to create effective governance and funding mechanisms in support of excellence; and to strengthen the knowledge triangle between education, research and business (EC, 2011a, p. 3). While in our MODERN report on Internationalisation and its quality assurance the dearth of good statistics was deplored, especially on the added value of internationalisation to the learning outcomes for students, the Commission is convinced that ‘[l]earning mobility helps individuals increase their professional, social and intercultural skills and employability’ (EC, 2011a, p. 6). The motivation of the EC to be interested in internationalisation is based on the need to attract talent from around the world to Europe in view of the changing demography of Europe and of the increasing need to supplement public money with other income sources.

The establishment of ERA and EHEA have changed the internationalisation opportunities in European higher education, however the Commission is aware that much still needs improvement, especially in the area of practical obstacles (visa and working conditions are mentioned repeatedly), academic recognition and the portability of grants and loans (EC, 2011a, p. 6).

Facilitating internationalisation is predominantly a task for the EU Member States and the higher education institutions, but the EU is also planning to shoulder part of the burden. The recently-developed U-Multirank is seen as a tool to increase information about international options for students and academics; further improvement of statistical databases is also envisaged (EC, 2011a, pp. 10-11).

EU’S MAIN TASK: FACILITATING MOBILITY

Most attention in the Modernisation Agenda goes to mobility, student mobility primarily. Mobility and recognition can be considered as cornerstones of the development of higher education in Europe. Without the recognition of credits and qualifications between countries, mobility would not reward students with the credits or the qualifications they earned. At the same time, growing mobility demands agreements on the value of credits and qualifications. Without recognition of credits and qualifications, Europe’s higher education would remain a patchwork of different systems without any routes for educational exchanges. The importance of a well-functioning ECTS for recognition is underlined by the Commission.

The imbalance between net-receiving and net-sending countries found e.g. in the assessment of the Bologna Process (Westerheijden et al., 2010) is acknowledged together with the threat of ‘brain drain’ for the latter set of countries (EC, 2011a, p. 11). Concerns about the quality of cross-border higher education, especially if franchised, are repeated as well.

Strong emphasis is put on instruments to stimulate ‘vertical’ or degree mobility, in particular for students to take a master’s degree abroad. The main elements are: improvement of ECTS and especially the new Erasmus Masters Degree Mobility Scheme with a European-level student loan guarantee facility, to become operational in 2014 (EC, 2011a, p. 12). Vertical mobility is too low in the EC’s eyes. It is, however, the type of mobility that most clearly increased in the first seven years after the Bologna Declaration (Westerheijden, et al., 2010).

Staff mobility, especially making the European labour market obstacle-free for talented researchers, is another area that receives attention of the EC, although in this area it can do little more than promote market transparency, as labour regulations are to a very large extent in the hands of the Member States.

Regarding other aspects of internationalisation than mobility there is passing mention of growth of innovative education approaches, e.g. for cross-border higher education, through use of ICTs (EC, 2011a, p. 5). Besides, the EC in several places mentions that it wants to develop or strengthen policies to aid higher education institutions and Member States in their internationalisation strategies, especially with a view to facilitating cooperation and partnerships (most explicitly: EC, 2011a, p. 15).

ISSUES IN INTERNATIONALISATION IN THE MODERNISATION AGENDA

The EU strengthens its focus on internationalisation in the modernisation of higher education and research. The core of internationalisation is seen in student mobility. Besides the current initiatives that aim to support especially horizontal mobility (credit mobility) such as the Erasmus programme, attention is now also given to vertical mobility (diploma mobility). Improvement of ECTS and extension of the Erasmus programme to give support for vertical mobility (diploma mobility) reflect trends visible in the statistics, i.e. vertical mobility is strongly increasing since the degree reforms in the framework of the Bologna Process. Given the rise of vertical mobility in the last decade, this seems an area where the proposed facilitatory instruments could well be very effective to enlarge mobility further.

The EC intends to support an analysis of student flows, which would address the issue of inadequate statistics. The quality issue in internationalisation does not seem to be addressed directly, although standards are mentioned, and the development of a Register of Tertiary Education institutions was mentioned in relation to the improvement of statistics (EC, 2011a, pp. 12, 11).

Regarding staff mobility, the EC recognised that the EU can do little more than promote market transparency, and urge Members States to reduce obstacles in their regulations. It is hoped that this will lead to increased intra-European mobility, but also—and this gets more attention—to attract talent from other parts of the world (EC, 2011a, p. 14).

While on the one hand the Commission is clear about the need for Europe to attract talented students and researchers and thus unavoidably cause brain drain in other parts of the world, on the other hand it stresses mutuality and good neighbourly policy (EC, 2011a, p. 14). This paradoxical set of statements is not explicitly noted in the Modernisation Agenda. We wonder whether the partnership intentions or the attractiveness of Europe will prove to be more influential on actual policies. In this context it may be significant that indicators on Europe's attractiveness figure prominently in the Performance Scorecard for Research and Innovation (percentage non-EU persons among doctoral students). Also when it comes to taking away obstacles to mobility e.g. through amendments to the students and researchers Directives, the emphasis seems to be on making 'the EU even more attractive to talent from non-EU countries' (EC, 2011a, p. 14).

With its particular stress on student mobility, the conception of internationalisation in the Modernisation Agenda seems to be too restricted. Aspects of internationalisation other than mobility (and information provision e.g. through U-Multirank, mentioned at the beginning of this section) do not figure prominently. Especially elements of internationalisation 'at home' are not given attention,⁶ even though this is an area affecting 100% of students, rather than the 20% that it is aimed to become mobile by 2020.

⁶ The Recommendation *Youth on the Move*, although also focusing on 'the move', i.e. mobility, gave somewhat more attention to aspects of integrating mobility with experiences at home. Besides, the Recommendation gave more attention to integrating learning experiences from internships or apprenticeships and to informal and non-formal learning; aspects missing in the Modernisation Agenda paper. Council Recommendation of 28 June 2011: 'Youth on the move' – promoting the learning mobility of young people, 2011/C 199/01(2011).

5. KNOWLEDGE EXCHANGE AND THE MODERNISATION AGENDA

HIGHER EDUCATION INSTITUTIONS AS DRIVERS FOR INNOVATION

The Council of the European Union and the European Commission strongly support the recognition of the importance of knowledge to social and economic development. The perceived failure of European countries to translate scientific advances into marketable innovations ('the innovation paradox') needs to be resolved if Europe wants to realise its ambition to become the most competitive economy of the world. Processes of knowledge transfer and knowledge exchange must be improved and in these processes higher education institutions are regarded as crucially important. "Better exploitation of the expertise and knowledge found in higher education institutions can strengthen innovation potential and, thus, economic performance at regional, national and European level." (EC, 2011b, p.9) Higher education should contribute to the renewed Lisbon strategy and the EU 2020 strategy by enhancing close, effective links between higher education, research and business. To improve this knowledge triangle of education, research and innovation is the point of departure for future reform. Closer cooperation and intensified interaction of knowledge providers (higher education institutions and research institutes), business and industry, and local, regional and national governments is seen as the way forward. Higher education institutions should not screen off their activities from the outside world ('ivory towers'), but actively, strategically and commercially engage in interactions with external stakeholders. They should not only pass on knowledge (unidirectional) but also absorb knowledge from elsewhere into their curricula and future research.

European and national policy makers have the feeling that higher education institutions are currently not contributing enough and further action is needed to achieve the goals of the renewed Lisbon Strategy and the EU 2020 strategy. "The capacity of higher education institutions to integrate research results and innovative practice into the education offer and to exploit the potential for marketable products and services remains weak." (EC, 2011a, p.7). The current state of commercialisation activities (licensing, patenting, spin offs and consultancy) leave for example the impression that only a minority of academics are engaged with other organisations – apparently an insufficient use of potential.

THE TWO PILLARS OF KNOWLEDGE EXCHANGE

According to the 2011 Modernisation Agenda (see BOX 1 above), higher education should focus more on entrepreneurial, creative and innovation skills, promote more interactive learning environments and strengthen the knowledge-transfer infrastructure. Higher education institutions should increase their capacity to engage in start-ups and spin-offs. Partnerships and collaborations with business should be regarded as a core activity of higher education institutions. And higher education institutions should systematically be involved in the creation of regional hubs of excellence and specialisation. Thus, the Modernisation Agenda basically mentions two pillars for knowledge exchange improvements. The first pillar relates to teaching, the second one to research. With respect to both pillars interactions and partnerships between knowledge providers and businesses are essential.

In diversified higher education systems knowledge exchange should be geared towards a wider range of student needs, should better respond to labour market needs and should have a stronger focus on innovation and entrepreneurial skills. Highly skilled human capital is Europe's competitive edge, which must be provided through higher education. "Highly skilled, creative individuals with critical mind sets are needed to create the businesses of the future and more generally help businesses and the public sector to innovate. Within this context, higher education staff play a crucial role in transmitting knowledge through well-designed and structured programmes of education and research. At the same time, programmes (...) can benefit from insights from business and other organisations external to higher education." (EC, 2011b, p.9)

Delivering high quality and ‘labour-market relevant’ education to an even larger proportion of the population requires adaptation of curricula and mentality. It requires changes in the traditional approaches to designing and delivering educational programmes. “For education to fulfil its role in the knowledge triangle, research and innovation objectives and outcomes need to feed back into education, with teaching and learning underpinned by a strong research base, and with teaching and learning environments developed and improved through greater incorporation of creative thinking and innovative attitudes and approaches.” (EC, 2011b, p.35)

The Member States should develop policies “which encourage partnership between professional institutions, research universities, business and high-tech centres” in such a way that the relationship between basic and applied research improves and knowledge is transferred to the market more effectively. National policies and initiatives geared towards a more innovative culture within the institutions should for instance take away barriers that prevent universities from making profits or from engaging in public private partnerships. And connected knowledge providers can drive regional economic development; centres of knowledge servicing regional and local economies and societies (see also the previous section on regional innovation).

THE EUROPEAN COMMISSION’S INSTRUMENTS TO SUPPORT KNOWLEDGE EXCHANGE

The European Commission intends to support the strategy to improve the knowledge triangle in a number of ways. It sees the European Institute of Innovation and Technology (EIT) and its Knowledge and Innovation Communities (KICs) as the genuine model, in which knowledge-intensive entrepreneurship building on multi-disciplinary, innovative research is promoted through educational programmes. The EIT and KICs are intended to provide good practices of integrated partnerships, new governance and funding models. EIT abolishes the linear innovation approach and strives to create an interactive and dynamic relationship between education, research and business and industry. Each KIC aims to become of world-wide reference for cutting-edge research. This excellent research is then tapped by EIT into education programmes, providing world-class training. The higher education institutions engaged in the KICs have the opportunity to integrate research and innovation results into the educational offer and to exploit the potential for marketable products and services. These educational programmes couple in-depth scientific knowledge with entrepreneurial skills, creative and innovative attitudes.

Moreover, to design and deliver new courses the EC sees the Knowledge Alliances of businesses and higher education institutions, launched in April 2011, as promising. Knowledge Alliances aim to strengthen the employability, creativity and innovative potential of graduates and professors and the role of institutions as engines of innovation. The EC also has launched the University-Business Forum, which is a platform where universities and business exchange ideas about collaboration to ensure that education delivers high-level and high-valued skills, underpinned by adaptability, entrepreneurship, creative and innovative capabilities (SEC, 2011, p.34).

The Marie Curie actions are in the eyes of the EC another example of an effective tool for stimulating knowledge transfer. To further foster innovation in training future researchers within the Marie Curie programme, the EC will develop European Industrial Doctorates and Doctoral schools.

Finally, the EC wants to develop traineeships to help students and graduates to get practical knowledge needed for the workplace. Practical work-relevant experience as part of study programmes are regarded as important and for this the EC seeks to create a single and centralised platform for traineeships.

HIGH EXPECTATIONS FOR HIGHER EDUCATION INSTITUTIONS

What the Modernisation Agenda basically asks from the Member States and particularly the higher education institutions is a culture shift. “The traditional academic culture in universities needs to be complemented by an awareness that it also has a key role in delivering a more highly skilled, enterprising and flexible workforce which will form the foundation for economic growth and prosperity” (Council of the European Union, 2009). A positive attitude towards innovative behaviour in both teaching and research to make the knowledge triangle work is required and should be worked on. This means among other things bridging the gap between traditional academic values and the values of commercial sectors. Traditional academic cultures in universities must be complemented with a focus on delivering a highly, skilled, enterprising and flexible workforce.

The challenge for higher education institutions is to develop a strategic agenda which strengthens knowledge exchange within existing university activities. This was a major focus of the fourth MODERN thematic report on knowledge exchange (see the executive summary in part two of this report). Without repeating the full argument here this requires higher education institutions to strengthen their strategic management capacities. The first step is to better understand what knowledge exchange is, how they use it and the strategic opportunities it offers them. They have to be selective in where and how to exchange knowledge and with whom. The EC argues that higher education institutions too often seek to compete in too many areas. Selectivity, that is making strategic choices, is necessary in the pursuit to excel (not only in basic research but in other areas as well) and also to avoid mission overload or unwanted mission stretch.

The Modernisation Agenda expects higher education systems to simultaneously improve their performance in various ways. As regards teaching the number of graduates should increase (productivity), dropout rates should decrease (efficiency), qualifications and competences (e.g. creativity and entrepreneurial skills) of these graduates should better meet labour market demands (relevance) and the quality of teaching should improve. And knowledge should be transmitted to ‘non-traditional’ audiences: more part-timers, lifelong learners and international students. In terms of research the knowledge transfer and exchange should be strengthened (e.g. collaboration, staff sharing, licensing, patenting, start-ups and spin offs), but still being underpinned by a strong (traditional) research base. This obviously places higher education institutions (and governments) in a challenging position: they have to fulfil many expectations across the full spectrum of their activities in an unfavourable financial environment.

We believe that the key issues are once again selectivity; strategic decisions; distinct profiles and diversity: the modernisation agenda is not seeking to encourage all of Europe’s higher education institutions to move in the same direction over the next nine years. In fact, the Modernisation Agenda encourages HEIs to enhance their strategic intelligence. In carefully reconsidering their range of potential activities, HEIs should establish realistic profiles and strategies, based on internal strengths and external opportunities. This is likely to become increasingly important as stakeholders such as governments, businesses and students make more use of external benchmarks in rewarding or selecting a particular institution.

In the knowledge exchange report we do draw attention to the risks of creating a sense of urgency around the changes needed in the area of knowledge exchange. Changes in the world are presented as requiring dramatic changes from universities (including cultural shifts) and demanding a new kind of institutional mission and that universities pay attention to new stakeholders’ voices. In this context it is hardly surprising that academic staff have concerns about academic and institutional freedom. We also argue that this situation is not helped by an excessively narrow focus on commercialisation activities which sets these up in competition with teaching and research (third mission) and produces the impression that only a minority of academics are engaged in knowledge exchange and with external organisations.

6. REGIONAL INNOVATION AND THE MODERNISATION AGENDA

The Europe 2020 strategy (EC, 2010a) highlights the key role of innovation in contributing to smart, sustainable and inclusive growth. Better exploitation of the expertise and knowledge found in higher education institutions can strengthen innovation potential and, thus, economic performance at regional, national and European levels. Regions are important sites for innovation because of the opportunities they provide for interaction between businesses, public authorities and civil societies. As centres of knowledge, expertise and learning, higher education institutions (HEIs) can drive economic development in the regions and territories where they are located. HEIs can bring talented people into innovative environments and thus work on building regional strengths – even on a global scale. HEIs can do so by fostering an open exchange of knowledge, staff and expertise. They can act as the centre of a knowledge network or cluster serving the local economy and society. Realising this, the European Commission has indicated a wish to strengthen the interaction between HEIs and the business world. An efficient and effective interaction between publicly funded knowledge producers and the private sector (business, industry, other private and non-profit organisations) is regarded as a crucial element in establishing a competitive (regional and national) economy.

Regions have a central role to play as they are the primary institutional partner for universities, other research and education institutes and SMEs, which are key to the process of innovation, making them an indispensable part of the Europe 2020 strategy (EC, 2010a). It is important to note that the 2011 Modernisation Agenda (EC, 2011a) does not pay explicit attention to regions or regional innovation as such. It rather does so implicitly – under the broader headings of innovation policy and university-business cooperation. The Modernisation Agenda mentions that a key policy issue for Member States and HEIs is to target regional support towards higher education-business cooperation, particularly for the creation of regional hubs of excellence and specialisation (EC, 2011a, p. 8).

Referring to our fifth MODERN thematic report on University Engagement and Regional Innovation (see the executive summary included in part two of this report) we note that, for a region, higher education often acts as a major business. The combination of region and higher education can be a global gateway for marketing and attracting inward investment to a region. HEIs help generate new businesses and can provide advice to established businesses in the region. They contribute to the health, well-being, social inclusion and environmental sustainability of their region. Higher education institutions are enhancing local human capital while regional businesses will try to employ some of the graduates of local universities and send their employees to universities for professional up-skilling courses. Furthermore, the region serves a role in providing both some of the contents and audiences for the cultural programmes offered by higher education institutions.

The great significance of a higher education institution is that it can be an important site of connectivity in the knowledge society. To maximise impact, local and regional authorities would have to implement smart specialisation strategies (see below) to concentrate resources on key priorities and maximise impact.

A key issue for the European Commission as expressed in its Communications – such as the ones on the Innovation Union (EC, 2010b), the Modernisation Agenda (EC, 2011a) and the role of regional policy for smart growth in Europe (EC, 2010d) is to maximise the effectiveness of universities in contributing to regional growth. It will be important to explore how to overcome barriers, to build capacity and to implement partnerships and leadership processes to interconnect the various partners in regional innovation systems.

Many recent policy initiatives at EU, Member State and regional levels have sought to improve the performance of research and innovation systems in the EU27. The divergence in innovation performance within the EU is particularly wide if regional innovation performance is considered. The 2009 edition of the ‘Regional Innovation Scoreboard’ (RIS) reveals that all countries have regions at different levels of performance (Hollanders et al. 2009).

The EC's *Innovation Union* initiative (EC, 2010b) mentions that an uneven spatial distribution of research and innovation-related activities still persists across the globe, with investment in these activities often concentrated in a relatively small number of locations. However, as a consequence of globalisation the number of such agglomerations or 'innovation hot spots' is increasing. This is the case even in relatively new fields (EC, 2010c, p. 27). Policies to foster 'innovation hot spots' or 'clusters' have long been a focus of regional, national and EU policy (EC, 2010e). Accumulations of knowledge assets such as these generate added value and knowledge spillovers, which in turn attract other mobile assets (human and capital) and act as a disincentive to the dissipation of existing assets. These 'hot spots' then act as growth poles for regional development, which is why 'cluster' policies which support the development of business environments and public private partnerships that provide fertile ground for innovation and the emergence of new industries have been warmly embraced by regions as a way of deploying Structural Funds.

The communication on the role of regional policy in contributing to smart growth in Europe 2020 (EC, 2010d) sets out a range of policy recommendations to tackle regional disparities and encourage higher levels of investment in innovation in the regions. The communication "A new partnership for the modernisation of universities: the EU Forum for University Business Dialogue" (EC, 2009) aimed at taking stock of what had been achieved so far and the way forward to the University-Business Dialogue. It also highlights the regional dimension and calls for university-business partnerships where both national governments and regional authorities are actively involved. The Flagship initiative "Innovation Union" (EC, 2010b) also stresses the need for an integrated approach between EU, national and regional policies for strategic and focused innovation. This highlights the need for a system-wide approach.

SMART SPECIALISATION

The Commission's Regional Policy communication (EC, 2010d; 2010e) very much revolves around the idea of smart specialisation. Smart specialisation involves business, research centres and universities working together to identify a region's most promising areas of specialisation but also weaknesses that hamper innovation. Smart specialisation means regions are focusing on a clear "niche" where they can be most successful in developing sustainable growth and stability in society, building on their regional assets, human capital and infrastructure. The smart specialisation argument emerged originally out of the literature examining the transatlantic productivity gap (Foray, et al., 2009). More recently the focus of this literature has shifted to the issue of the transatlantic differences in the dissemination of new technologies across the wider economy. Smart specialisation is about setting clear strategic priorities, focusing on local strengths, removing bottlenecks to innovation and harnessing innovation potential in all European regions. It is believed to be an important new paradigm for EU innovation policy, securing prosperity and jobs in the regions, as well as making Europe more competitive and knowledge-driven as a whole, in line with the Europe2020 agenda.

The essence of 'smart specialisation' is to build on regional strengths in key strategic areas, but doing so informed by an overarching picture of each region's competitive advantages and disadvantages in a context of fierce global competition for resources. Smart specialisation strategies help regions to identify their best assets in order to be able to concentrate their efforts and resources on a limited number of priorities where they can really develop excellence. Regions are supposed to do this in partnership with the business community and their stakeholders from research and academia. Here, it is also vital that the regional stakeholders have an international perspective, which includes exploiting the cooperation potential and synergies with neighbouring regions and/or regions with similar specialisations. The goal is to strengthen existing 'hot spots', to support the development of emerging industry clusters driven by new technologies and service innovations. It will not be easy for regions in the EU to make wise (or 'smart') decisions about the types of clusters and hot spots they nurture.

Some may even question whether it is wise for a region to specialise in particular areas and concentrate resources and achieve excellence in selective clusters (the 'backing winners' approach). But what to do about areas that have not yet achieved a prominent status but that nevertheless may be of strategic importance in the future ('backing the challengers')?

For HEIs, the smart specialisation strategy suggests a key role for strategic intelligence to identify the high value added activities which offer best chances of strengthening a region's competitiveness. HEIs may need to be persuaded to indeed take a regional perspective, instead of a more global perspective. Building Smart Specialisation therefore is not a simple recipe, but more like a process, where HEIs actively participate in partnership with public, private and third sectors. For universities and other HEIs this requires an understanding of the principles of innovation/smart specialisation and their specific regional context. Building capacity to do so requires peer to peer learning and creating a 'community of practice'. In this process, innovation is the overarching policy objective, while all policy instruments, measures and funding are designed to contribute to innovation. Here, EU and national/regional policies are expected to be closely aligned and mutually reinforcing and a strategic agenda would have to be agreed upon and monitored at regular intervals.

BEST PRACTICES AND THE ROLE OF THE EU, NATIONAL AND REGIONAL GOVERNMENTS

In order to assist regions in better identifying their strengths and opportunities and developing smart specialisation strategies, the EC has made available a great deal of studies and practical guides (for example: EC, 2011d) that provide a number of good and best practices. One concern in using good (or best) practices is to make sure one has a clear understanding of the ways in which other countries and regions have gone about constituting and implementing successful policy mixes. Nevertheless, experiences with different national policy mix review processes suggest that countries and regions can benefit considerably from an appreciation of 'best practice' even if such practice invariably has to be customised to their own particular circumstances. Overviews of experiences across the EU (and more widely) could be used by countries and regions to benchmark their own efforts to improve regional research and innovation system performance.

One option is for Member States to make more extensive use of the Structural Funds. Member States typically exploit Cohesion policy and the Structural Funds to further regional development. In the spirit of the EC communication on the role of regional policies in contributing to the EU2020 agenda (EC, 2010d), regions are encouraged to make a more effective and better combined use of European national and regional public funds for research and innovation. At the European level, this refers in particular to the European Regional Development Fund (ERDF), the Seventh framework programme for research and innovation (FP7), the Competitiveness and Innovation Programme (CIP), as well as EU support for education. The EC Commissioners responsible for Regional Policy and Education published a 'practical guide to EU funding opportunities for Research and Innovation, explaining to what extent several European funds may be combined (EC, 2011d). Over the years, the EU Structural Funds have provided increased funding for research and innovation. Structural Funds have now become an important source of support for research and innovation in many European regions. Initiatives supported may span the whole innovation chain, including support for research and technological development, for entrepreneurship and start-ups, for advanced support services and for the development of human capital, to name just a few of the relevant categories. There is also scope for Member States to increase their use of cohesion funds to enhance support for research and innovation activities. In particular, this could take the form of technical assistance to interested regions to move towards 'smart specialisation' and cross-border co-operation.

An important issue with respect to research and innovation concerns the complexity, fragmentation, and lack of coordination and common strategies between the policies, programmes, instruments and actions, which may hinder the realisation of the EU2020 goals (Synergy Expert Group: SEG, 2011). The Seventh Framework Programme (FP7), the Competitiveness and Innovation Framework Programme (CIP), the European Institute of Innovation and Technology (EIT), the Structural Funds (SF; including European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund (CF)), ideally aligned with Member States' and regional programmes, are all attuned to (different) aspects of (regional) innovation. The creation of synergies between the various existing programmes should enable significant efficiency gains (SEG, 2011, p. 10). Following the EU Budget Review it has been suggested to develop two main frameworks that incorporate all the existing programmes in the following way:

1. Common Strategic Framework for Research and Innovation (CSFRI) encompassing EU research activities of FP7, CIP and EIT;
2. Common Strategic Framework for Cohesion Policy (CSFCP) encompassing ERDF, ESF and CF.

The Synergy Expert Group states “...the new EU policy frameworks make it possible to address the current limits in the transfer and inter-linkages between research and regional development, the lack of consistency between plans, and the absence of temporal coordination between EU programmes and the various national and regional policies and programmes. In this sense, the Europe 2020 priorities and the Common Strategic Frameworks may be expected to have the combined effect of strengthening excellence in both research and innovation in the European Union” (SEG, 2011, p. 13). The SEG has made more than seventy recommendations for the current and next programming period to create synergy between the various programmes linked to innovation and regional development in Europe.⁷

The Modernisation Agenda suggests that the ERDF can be used to invest in building or renovating higher education institutions, providing equipment and promoting digitalisation, and support incubators, spin-offs and other forms of university-business partnerships (EC, 2011a, p. 15). For instance, HEIs can provide advice and services to small and medium-sized enterprises (SMEs) and participate in schemes promoting the training and placement of high-level graduates in innovative businesses. They can also host incubators for spin-offs in science and technology parks and be linked to innovative clusters and networks. Such activities are frequently supported by dedicated national funding instruments and regional development funds, as well as the European Regional Development Fund (ERDF).

National and regional governments have taken several measures to stimulate academia and industry in bridging the gap between them and thus to enhance innovation. Several grant schemes and incentives exist that on the one hand stimulate HEIs to ‘valorise’ their knowledge and on the other hand try to stimulate companies to use academic knowledge. Many governments are providing funding streams for HEIs to encourage their “third stream” (innovation-oriented-, commercialisation, and engagement) activities and increasingly are targeting their policy instruments at knowledge diffusion in *public-private partnerships*. Government policies and incentive schemes seek to encourage universities to become more entrepreneurial, to engage in spin-off company creation and to interact more closely with their outside (business) world, and show greater external connectedness, stressing collaboration across organisational boundaries.

The strengthening and expansion of university-private sector partnerships is believed to be vital both for the success of the universities’ academic research and for continued innovation. University-industry research partnerships are an example of a public-private partnership (PPP). A study made by the European Commission covering the most research-active universities from 33 European countries is providing budget data for a sample of 200 European universities (De Dominicis, 2010). It shows that research active universities in Europe in general have a proportion lower than 10% of their budget coming from industry. Compared to other regions in the world, such as the US, the European Union has a lower level of direct commercialisation of scientific output by universities.

Among other things, university-private sector partnerships produce new knowledge, some of it published in articles (including public-private co-publications), and another part of it embodied in people (tacit knowledge) and new technologies (including protocols, prototypes, and other artefacts). Partnerships may be characterized by their membership and the boundaries they span, the geographical proximity of the partners, and the level of formality of the collaboration. Some industries and academic environments have for a long time had very close ties, whereas interaction is infrequent in other areas. Traditions for interaction in different sectors often reflect national and/or regional specialisations.

⁷ For these recommendations see the report of the Synergy Expert Group: ftp://ftp.cordis.europa.eu/pub/fp7/docs/seg-final_en.pdf

THE CONSEQUENCES FOR UNIVERSITIES AND OTHER HEIS

A strengthening of the role of universities and other HEIs in the regional innovation system will run into the next set of issues. As mentioned before, it requires universities to assess their institutional missions with an eye upon the specific assets, strengths and opportunities available in their region. There will be an increasing demand to focus and prioritise institutional missions. Incentives to encourage structured partnerships with regional enterprises may need to be considered for bringing HEIs closer to the world of business. Beyond their original mission, universities will have to reflect on their role as economic actors. However, at the same time they may wish to focus on their individual strengths, and to develop centres of excellence.

There is an increasing pressure on HEIs to be better equipped to meet demand from the market and to increase the impact of their research. Structured partnerships are expected to strengthen interactions between HEIs and enterprises (funding, opportunities for researchers, etc.). Incentives will therefore be essential to establish the necessary structures in HEIs, develop an entrepreneurial spirit and management, and the required business and innovation skills. In terms of their educational offerings, HEIs will have to see whether the knowledge and skills that their students are acquiring are geared to the needs of the labour market and whether there is a connection to the regional labour market as well. Here, all levels of education need to be taken into account, including adult education and continuing or refresher training courses. HEIs may also need to consider placements in regional industry.

In this context, HEIs will have to respond to the many claims for accountability coming from their various stakeholders – national, regional, academic and non-academic. In the course of HEIs becoming more important players in regional innovation systems, there will be a need to rethink evaluation systems for HEIs, their performance criteria and the ways of involving external stakeholders in the governance of HEIs. All of this is to guarantee that HEIs will continue to play a role as centres of excellence and relevance for their national as well as regional environment. This may require some HEIs to reform their governance, funding and their educational and research offerings, with some going towards meeting the suggestions provided by the recent Modernisation Agenda and the EC communications that have preceded it.

7. IN CONCLUSION

Having considered the Modernisation Agenda from the different angles of the five MODERN thematic areas we end this discussion document with two more general observations.

While the EC acknowledges the member states' prime responsibility for education as well as the autonomy of higher education institutions, it sees a clear role for itself in developing a Europe of Knowledge through agenda setting; developing common goals and monitoring progress towards them; identifying and sharing good practices; pushing particular initiatives; and funding. The EC aims to contribute by means of providing incentives to increase transparency, diversification, mobility and cooperation. The 2011 Modernisation Agenda and its underlying strategic policy communications (such as the EU2020 strategy) reflect the EU's ambitions to work towards becoming the world's most competitive knowledge economy. These communications include a wide range of recommended activities for Member States and HEIs (and to some extent other stakeholders) in order to realise these ambitions. Member States and HEIs find themselves in a challenging position: they need to fulfil many expectations across the full spectrum of their higher education activities and this must be accomplished in an unfavourable financial environment.

In considering the Modernisation Agenda from the five thematic angles of the MODERN project, it is evident that the need for clear and courageous institutional strategic decision-making and profiling is one of the paramount challenges for European higher education. In terms of governance, greater levels of institutional autonomy are regarded as a prerequisite for the development of such profiles and the ability to act decisively in terms of such strategic choices. The increasing use of competitive and performance-orientated funding also encourages institutions to think strategically in terms of their delivery of services. With respect to knowledge exchange and partnerships, HEIs are encouraged to strengthen their strategic management capacities. They need to be selective in where and how to exchange knowledge and with whom. To strengthen their role in the knowledge-transfer infrastructure, HEIs have to think strategically about their teaching and research portfolios. Intensified collaborations with businesses, or actively contributing to the establishment of regional clusters to improve local economies call for an in-depth understanding of what HEIs can and should do.

The development of clear institutional profiles will not only prepare HEIs to survive in increasingly competitive local, national and global environments but will also provide an opportunity to make the diversity of European HE systems more transparent and constitute an important point of departure for the development of more appropriate mission-based accountability requirements. The EC is keen to support the design and implementation of scoreboards, information and benchmarking tools to improve the transparency of higher education systems. U-Map and U-Multirank⁸ (Van Vught and Ziegele; 2012) are such ‘transparency instruments’ explicitly intended to develop institutional activity and performance profiles across the full spectrum of higher education activities (teaching and learning, research involvement, international orientation, knowledge exchange and regional engagement). Such instruments can make a major contribution to institutions’ understanding of whether, how and to what extent they seek to respond to, and actually succeed in meeting, the multiple and complex array of expectations of a variety of different stakeholders.

To return, briefly, to the overall focus of the MODERN project: higher education leadership and management and the need for this to be more systematically developed and professionalised. The reflection on the Modernisation Agenda from our five thematic angles in this part of this report and the executive summaries of the five thematic areas themselves in part two both demonstrate not only how important institutional strategy and profiling has become in the contemporary lives of European universities but they also highlight the complexity of the policy environments within which such strategy and profiling must be developed and pursued.

Another component of the MODERN project has sought to address the demand for and provision of education and training activities in the area of higher education management and leadership in Europe. Its final report⁹ presents and discusses the outcomes of a needs assessment and a training programme supply survey conducted in spring 2010. The major conclusions of this study support our analysis. There is a widely recognised need within the sector to professionalise institutional management and leadership functions and staff in European higher education. Most respondents feel that more should be done with respect to management and leadership training in their own institutions as well as at the national level. This market is not diversified as yet and is in an early stage of professional development. There is a need for the development of new and improved training programmes (including postgraduate qualifications), for better career development pathways and for the training of both academic and research leaders and professional managers.

These challenges are a key link in the modernisation chain: clear European and national strategy, policy and instruments; institutional autonomy, strategy and profiling; and, last but not least, institutional leaders and managers with the developed capacity to ensure that European higher education can make its expected major contribution to the realisation of the goals of Europe 2020.

⁸ For more information on these instruments see their respective web-sites: www.u-map.eu and www.u-multirank.eu

⁹ Peter Maassen and Atilla Pausits (2012) MODERN Report on Needs and Supply with respect to Higher Education Leadership & Management Training in Europe. Brussels, ESMU

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PART TWO: EXECUTIVE SUMMARIES OF THE FIVE MODERN THEMATIC AREAS

9. HIGHER EDUCATION GOVERNANCE REFORMS ACROSS EUROPE

INTRODUCTION

Since the 1990s the rate of change in European higher education has accelerated to unprecedented levels, largely on the shoulders of national legislators and initiatives at the European level in a context of economic, global and technological shifts. There is a widespread policy belief at both European and national policy levels that the quality and attractiveness of the European universities need to increase, human resources need to be strengthened, and the diversity of the European higher education system needs to be combined with increased compatibility (Dill and Van Vught, 2008). To make the European higher education systems more competitive and attractive appropriate governance structures and processes are frequently regarded as a precondition to achieve these goals (see for example the various EC communiqués).¹⁰

Obviously European-level initiatives such as the Sorbonne and Bologna Declarations, the Lisbon Strategy and the Modernisation Agenda have not been the only influences on European higher education institutions. In many (West European) countries a series of reforms were already underway in the 1980s and many current reform initiatives have their origin in this period (e.g. Neave, 1988). In many of the newer member states of the European Union a series of reforms were implemented after the fall of the Berlin wall in 1989. Globalisation, internationalisation and privatisation as well as fiscal crises and the rise of neo-liberal ideologies, partly as a response to a loss of trust in constructivist state approaches ('government failures') have all done much to shape the current situation. In the last decades considerable attention has been given to the adoption of new types of governance. Instead of governance via hierarchy as the traditional (and stereotypical) way, governance via markets, networks and communities have been advocated (e.g. Pierre and Peters, 2000; Bell and Hindmoor, 2009). Traditional state control, combined with collegial self-governance, is giving way to stronger institutional management in the name of efficiency and responsiveness to society's diverse needs, proven through new processes of accountability including quality assurance – the push of a New Public Management agenda.

In this contribution we want to picture the major themes and trends in the governance of European higher education systems. Governance, a highly contested, multi-dimensional and usually ill-defined concept, is regarded by us as the formal and informal exercise of authority that articulates the rights and responsibilities of actors, including the rules by which they interact. It is about rule structures of who decides when on what. We will speak of governance in structural terms, leaving 'governance as a process' aside. Our contribution on perspectives and trends is divided into two parts: external (system) and internal (institutional) governance. External governance refers to the institutional arrangements on the macro- or system-level, whereas internal governance refers to the institutional arrangements within higher education institutions.

¹⁰ EC (2002; 2003; 2005a; 2005b; 2005c; 2006; 2008), Council of the European Union (2007).

The picture we present on governance in European higher education is a general one. There will be exceptions to almost every observation we make, because of the diversity of the countries' past and present governance structures. Each country has specific governance arrangements, though increasingly drawing on the inspiration, success or symbolic importance of foreign practices ('policy learning' facilitated amongst other things by 'sharing' experiences and processes at the European level). Moreover, governance reforms in Europe differ in pace, depth, impact and timing. More detailed, country-specific descriptions and analyses of governance reforms can be found in single-country and comparative studies as well as in comprehensive studies from the OECD, Eurydice, EUA and CHEPS-coordinated consortia¹¹ (see also our full MODERN report "Higher education governance across Europe, 2009).¹²

EXTERNAL GOVERNANCE: THEMES AND TRENDS

The shifts towards new modes of external governance have been the consequence of several factors. One is financial; high public expenditures for continuously expanding higher education systems ('widening access') are demanding new steering instruments. Another and related factor is the ideological shift towards the market as a coordinating mechanism for service delivery. European higher education systems are increasingly 'redesigned' to function in quasi-markets. Third, globalization, internationalization and Europeanization have all challenged the national boundaries of higher education systems and pose new questions to governments and higher education institutions ('a game without frontiers'). Fourth, the New Public Management (NPM) organizational approach has been influential in "modernizing" public services. Such factors have encouraged policy makers to reconsider the rules of the game which aim at creating, or maintaining, open systems ('broadening access, intensifying university-business collaboration') delivering high quality services ('strive for excellence in teaching and research') that are affordable and efficient.

Surveying the results of roughly two decades of governance reforms, the literature suggests a changed role and attitude of states towards their higher education systems. States have been delegating some of their powers in different directions. One is an upward shift as policy agendas, strategic choices and rule structures are increasingly made at, or influenced from, the supra-national level (e.g. the European Union – despite the principle of subsidiarity – or organizations like the World Bank). States for example have not been ignorant of EU-level developments, views and initiatives. Thus, while each country has specific institutions and is responsible for organizing its own higher education sector, it is clearly drawing on inspirations and successes from abroad.¹³ A second shift is a downward shift as provinces, local governments and higher education institutions themselves are granted greater operating autonomy. Deregulation, though in reality often re-regulation, is a widely recognised state strategy to redistribute the powers and authorities in higher education systems. The overarching governance theme here is 'enhancing institutional autonomy'. The third shift has been outward: traditional tasks of the state are moved to the periphery, such as to NGOs, or even privatized. Here one can think of the establishment of new agencies ('accreditation'), the changing roles of existing agencies (e.g. funding agencies) and the entry of private service providers (e.g. to meet rapid demand).

These moves in three directions indicate that relationships are not only more complex and dynamic but involve more actors from various levels. It is believed that in many countries, coordination has changed from a classical form of regulation dominated by a single actor, the state, to forms in which various actors at various system levels coordinate the system ('multi-level multi-actor governance'). Coordination increasingly takes place through interconnected policy levels with a substantial number of actors influencing agenda's and policy development, determination, implementation and evaluation. This notion of governance which comprises a variety of actors is also frequently referred to as network governance (although many descriptions exist of this mode of governance as well): the state works explicitly with other stakeholders such as agencies, interest groups and private organisations to develop and implement policy. There is a growing recognition that the state is not only part of particular networks but also tries to steer via networks.

¹¹ Eurydice (2008), OECD (2008), CHEPS-Consortium (2006, 2010), EUA (2009).

¹² Available at: <http://www.utwente.nl/mb/cheps/publications/Publications%202009/C9HdB101%20MODERN%20PROJECT%20REPORT.pdf>

¹³ Bear in mind that according to our view governance has not just a formal but also an informal component. The Open Method of Coordination is a good example of the influence of the European level at the national higher education systems.

What adds to the complexity of governance through networks is that besides the redistribution of authorities and responsibilities among old and new actors, located at different policy levels, governance is also influenced by the fact that education, research and innovation (or R&D) are becoming increasingly intertwined. Where once these areas were largely 'separated' from each other, having their own governance structures with different players, logics, and value structures, these days they seem to be much more interrelated.

Marketization is another widely reported trend in higher education governance. Market-based governance refers to the use of market means to pursue public goals. It includes both the delegation of traditionally governmental powers to private players and the importation into government and public institutions of market-style management approaches and mechanisms of accountability (Donahue and Nye 2004). The state's role is one of market engineer. In this governance mode, government interventions are focused on the shaping of a level playing field, which facilitates self-regulation. In this context new steering devices have been introduced; output funding and multi-year agreements with the (individual) higher education institutions provide illustrative examples. In a nutshell, the marketization of governance in higher education across Europe is signaled by privatization, deregulation, establishment of quasi-markets, contracting out (competitive tendering), and the establishment of public-private partnerships.

The literature clearly suggests that states have initiated many reforms to enhance institutional autonomy in the name of efficiency, quality improvement and responsiveness. More institutional autonomy implies that institutions are increasingly empowered to take their decisions free from external interferences. Through competition and greater institutional autonomy higher education institutions are stimulated to become more efficient and sensitive to their varied consumers' demands for relevance. The role of governments is evolving into sometimes elaborate systems of incentives, sanctions and accountability (including quality control) that allow governments to continue utilizing their higher education sectors by 'steering from a distance'.

The external governance trend of granting more autonomy to higher education institutions requires some nuance. Across the board, a more refined picture reveals that some autonomy dimensions show an increase of institutional autonomy, whereas other dimensions show a loss. The 2010 CHEPS-consortium study concludes:

(...), institutional autonomy has grown overall, creating opportunities for public universities to act as more integrated organisations and to determine their own profiles and strategies; this is not the case for all dimensions of autonomy; public universities in many countries face limitations on their managerial flexibility particularly in terms of internal governance arrangements, staff and student selection and formal accountability requirements (CHEPS-consortium, 2010:12)

Ideally, institutional autonomy means that institutions are able to act independently in pursuit of self-chosen goals. In many countries however, also those that are believed to have rather autonomous institutions, institutions remain to a large extent dependent on others, particularly the state, at least for two reasons. First, governments remain the primary funding source for higher education institutions. While there have been many pleas and several attempts to increase the amount of private contributions in European countries, both in teaching (tuition fees) and research (public private partnerships and third party funded research), state contributions are still the most important source of income. And if there is some truth in the saying that he who pays the piper calls the tune, institutional autonomy will be restricted to some extent. Second, where governments choose to use non-traditional steering means, such as market-based policy instruments, they usually retain a responsibility for meta-governance – the government of governance (Bell and Hindmoor, 2009). Thus, while some rules of the game may leave more discretion to the institutions, these rules, for instance with respect to markets or networks, are still set by the state. For example, in some higher education systems private providers can offer teaching programmes, or public institutions have the possibility to offer the programmes they want, as long as they are accredited by a state, or a semi-autonomous agency. Or institutions can, or must, charge tuition fees *but* the tuition level is fixed the state.

Therefore, we would argue that the new modes of governance that are certainly visible, do not imply that the state's role has seriously declined or been hollowed out. There is still considerable national power in determining regulatory frameworks and incentive structures; national governments still shape higher education systems and institutions. The choice between markets and hierarchies is not a zero sum game. What we see, from a bird's eye view, is that states are using different strategies than in the past and this does not necessarily imply a loss of power and control or of the ability to steer higher education systems. New modes of governance, which are blends of tradition and new ideas, "can be seen as an extension of more traditional notions of public policy, except that the rubric of governance implies experimentation with a wide variety of governing strategies and the involvement of a wider range of non-governmental actors" (Bell and Hindmoor, 2009:2).

INTERNAL GOVERNANCE TRENDS

The European university landscape is characterized by a high degree of heterogeneity that is reflected in organization, governance and operating conditions, including the status and the conditions of employment and recruitment of teaching staff and researchers. Despite Europe's heterogeneity, several general observations with respect to internal higher education governance can be made.

As mentioned in the previous section, deregulation in the form of enhancing institutional autonomy has been one of the overarching governance trends in European higher education over the last two decades.¹⁴ The policy assumption is that more autonomy within higher education institutions will improve institutional performance and that of the higher education system overall. The rationale for this rests on the autonomous higher education institution actually being able to control and steer its outcomes and performance. For this reason reforms have been implemented to empower institutional leadership and management. Higher education institutions in Europe should be freed from over-regulation and state micro-management while accepting in return full institutional accountability to society at large for their results.

Enhanced institutional autonomy has meant higher levels of accountability as well as more stringent and detailed procedures for quality assurance at the state as well as institutional levels ('the rise of the evaluative state and the evaluative institution'). Opponents of this trend speak of an audited society or evaluation disease, hinting at an overkill of monitoring and reporting requirements (for institutions as well as within institutions). Greater accountability also means that higher education institutions have to redefine the ways in which they inform their stakeholders about their performances. Additional demands are placed on the academic leadership, which in turn requires new modes of communication with and assistance from the decentralized units (faculties, schools, institutes, departments). In many instances this has resulted in increasingly centralised oversight within institutions with new lines of reporting and new rules and procedures for academics to ensure the quality of the institution's primary processes. In many cases this has led to a further rationalization of higher education institutions' decision-making structures and/or putting in place new 'hierarchies' in which institutional leadership holds a central role.

One of the consequences of reshuffling authorities and responsibilities between the various levels within the higher education systems is that many powers have settled at the top level of the institutions. This has often meant a strengthening of institutional leadership, particularly in those higher education systems where traditionally the institutional top level was relatively weak. Another trend is that in many cases institutional leaders are being selected (appointed) instead of elected, in some cases making it possible for leaders to be appointed 'from the outside'.

¹⁴ Looking at the increasing degree of autonomy of the higher education institutions in the European higher education systems two remarks must be made. First, there are countries where autonomy has been granted primarily to the individual faculties instead of the institutions thus giving autonomy a different meaning and having different consequences for institutional management. Second, in some countries the state traditionally played a less visible role in steering higher education institutions. In these cases, with England as the obvious example, institutional autonomy has traditionally been higher than in Continental European countries.

In many countries, the position of the executive head (rector, president or vice-chancellor) has itself changed significantly as a consequence of granting more autonomy to the institutions. This is particularly true for their formal powers. However, in reality executive heads do not always have the possibilities to fully exploit their enhanced powers. As Weber (2006:72) argues “even if the formal decision structures and processes may give a different impression, most university leaders (rectors, presidents) are hardly in the position to make repeated important decisions.” Nevertheless there is a clear general trend of formally strengthening the position of the executive head across Europe.

There are various ways used in European higher education to select executive heads. In some countries rectors are elected by internal stakeholders. In Slovenia for instance academic staff and students elect their rector. This is also the case in Greece, where other internal stakeholders such as administrative staff vote as well. In other countries the executive head is appointed for instance by the governing board or council (e.g. Denmark and the United Kingdom). In some countries the executive head is appointed by the ministry or the institution’s proposed candidate needs ministerial approval. In some cases different mechanisms are used within a country (e.g. Norway). Clearly, different mechanisms are used to select the executive heads and different stakeholders are involved. There is no general picture and clear trend.

Driven by a NPM agenda, the strengthening of institutional leadership has also had an impact on leadership styles within the institutions. Traditional notions of collegiality and consensus-based decision-making have increasingly come under pressure, making room for ‘business-like’ management and the ‘professionalization’ of administrative structures. Borrowing instruments from the private sector, institutions have tried to enhance their possibilities to streamline the organization to cope with an increasingly complex environment. Developing institution-wide policies, strategic planning and ‘identity-building’ are more and more regarded as essential survival strategies. Higher education institutions increasingly act strategically, or are at least encouraged to do so, not only within their own organizations but also pro-actively with their external environment.

Another consequence of recalibrating university governance concerns the positions and roles of governing bodies of universities and the role and extent of external stakeholder representation within them. Many existing university governing bodies have been changed, and some new governing bodies have been established. One of the bodies that has been instituted rather recently in several countries is the ‘supervisory board’. The composition and role of these ‘top-level bodies’ differs across the European institutions. In some countries the role of this supervisory body is clearly separated from the executive’s role (e.g. the Netherlands), while in other countries the supervisory board has clear decision-making powers (e.g. in Ireland, Cyprus, Sweden, Norway). The composition of these bodies ranges from external members only (e.g. Austria, the Czech Republic, the Netherlands, and Slovakia) to a mix of internal and external members. Estonian, Spanish and Hungarian institutions have advisory councils at the top institutional level that serve as mechanisms of external guidance and bring external perspectives to bear on issues related to institutional governance. They should facilitate the relationship between the ministry and the institution; encourage the relationships with society and advise on strategic priorities. They do not officially monitor the institution and they do not have to approve strategic decisions. In some countries – e.g. Latvia, Poland, the Netherlands and Slovenia – such bodies are optional.

A final general tendency associated with the strengthening of the executive positions in the institutions (executive heads at the central level and deans at the middle level) and a more important governance role for external stakeholders is that this has happened, at least formally, at the expense of academics and students and their representative bodies (such as senates). In most countries institutions are legally obliged to have bodies that represent internal stakeholders (such as academics, students, non-academics). In some cases external lay members are part of such representative bodies (e.g. France and Malta). Norway is the only country in which such a representative academic body is not a mandatory part of the structure; the institution decides.

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10. FUNDING HIGHER EDUCATION: A VIEW ACROSS EUROPE

INTRODUCTION

While it is universally accepted that higher education is a critical factor in securing the welfare and competitiveness of nations, investment in higher education and research across Europe still lags behind that in the United States. Given the current financial crisis it seems that EU member states' abilities to make further investments from their already overstretched public budgets are limited. It is therefore of the utmost importance that overall revenues are increased, in particular the revenues – such as tuition fees – coming from private sources, and that public revenues are allocated in the most efficient and effective way.

This summary of the MODERN thematic report on Funding Higher Education looks at the levels of funding for higher education and the funding mechanisms that drive the allocation of public revenues to the higher education institutions (HEIs). Many countries have been in the process of reforming their higher education systems for some years, with many having implemented reforms in both the governance and funding of their universities. Some reforms have targeted the funding mechanisms that drive the allocation of public funds to HEIs (institutional funding) in order to encourage HEIs to operate more efficiently, or to seek private funding by working more closely with the private sector. Other reforms have targeted students, introducing mechanisms for raising student contributions (e.g. fees), or awarding student support to students in order to boost students' opportunities for access. Some of the topics we will address here are formula funding, performance based funding, contract funding, and project-based funding.

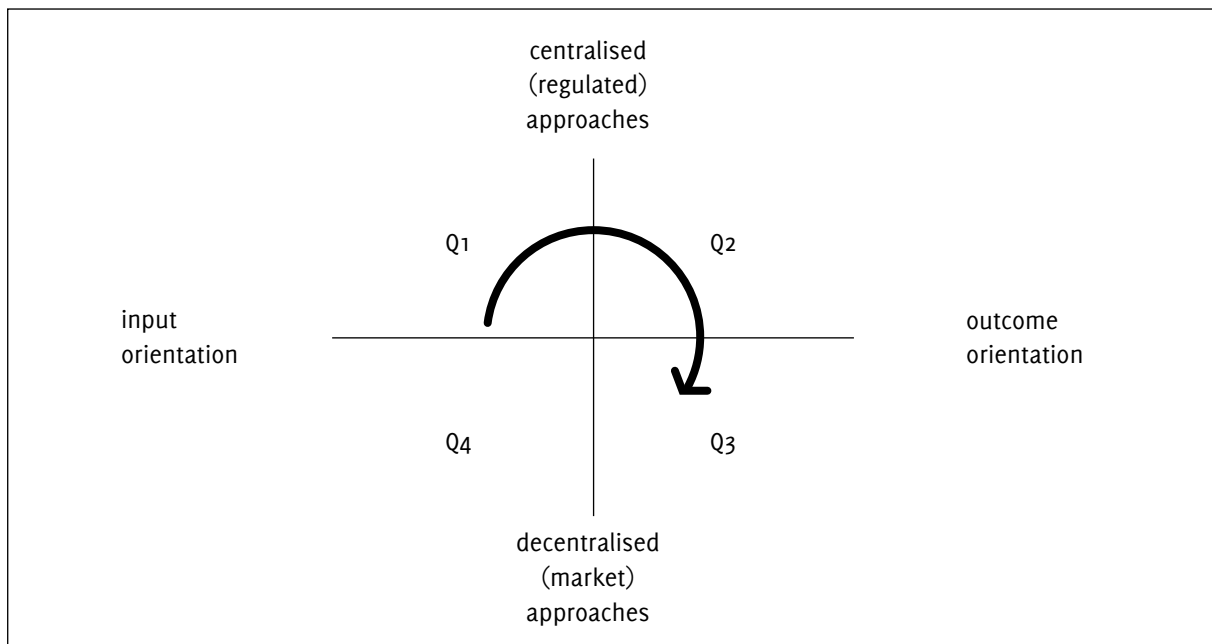
CLASSIFYING FUNDING MECHANISMS

Funding is a major government steering mechanism for higher education systems. Funding (or financing) is more than merely a mechanism to allocate financial resources to universities and students. It is part of the set of tools and other governance instruments that promote the achievement of common goals set for higher education (e.g. access, efficiency), that set incentives for certain behaviour (e.g. competitive research grants), and that attempt to maximize the desired output with limited resources. Funding of higher education is not an end in itself. Funding mechanisms are closely linked to general policy choices and governance arrangements – and the reforms thereof – in the public sector. Against this backdrop we look at higher education funding in Europe and the reforms that have been implemented.

The way governments provide funding sets incentives for behaviour, for instance a system of competitive research grants is likely to encourage HEIs to try and submit research proposals that meet the funding criteria in the best possible way and to try to do better than competitors in terms of delivering value for money. How much competition is implied in a funding mechanism may be seen as a positioning the mechanism on a continuum from a high degree of regulation on one end and a high degree of competition on the other. If, instead of research, the funding mechanism concerns the *education* function, a similar question would be: “are funded student numbers regulated or planned by central authorities, or are they driven by the decisions of the providers (or the students themselves)?”

How funding authorities strike a balance between competition and regulation may be pictured with the help of the diagram below, which can be used to show the trends in funding mechanism reforms in Europe. The regulation vs. competition dimension is combined with a dimension that expresses the degree of performance orientation in a funding mechanism. The latter dimension relates to the issue of whether the public grants allocated to HEIs are tied to measures of the teaching and research outcomes of their activities. If budgets are indeed heavily dependent on an institution's success in terms of education or research performance, we speak of performance-based funding (Jongbloed & Vossensteyn, 2001).

Figure 1: Funding mechanisms: classification and trends



In Europe, we see a gradual clockwise movement from the ‘north-western’ quadrant (Q1) towards the ‘south-eastern’ quadrant (Q3). This coincides with a trend towards ‘steering from a distance’ (see the discussion on governance in higher education contained in the previous chapter). The result of this movement is an increased reliance on market-type co-ordination mechanisms in the higher education sector - with decision-making left more to individual ‘agents’ (students, institutions) that choose on the basis of incentives instead of directives issued from above. For the issue of higher education funding, the introduction of market or quasi market reforms (Brown, 2010) has meant that competition for funding has increased in order to enhance efficiency and quality.

In higher education, the funding of the providers of higher education and research was driven traditionally mostly by input measures such as student enrolments or staff positions (Q1 in the above graph). In recent years, we witness the introduction of competition, user fees and more stress on performance-based funding, where HEIs’ government appropriations are increasingly based on measures of institutional *performance* (Q2 and Q3 in the above graph). Performance-based funding seeks to link performance measures to budget allocations and as such it is expected to improve the management and accountability of higher education institutions (HEIs). It is also expected to contribute to a higher degree of cost consciousness and goal orientation within the organisation. Based on information collected in the course of two interrelated projects on Governance Reforms and Funding Reforms in 33 European higher education systems (see CHEPS Consortium 2010a; 2010b) we may conclude that compared to 1995, when there were only five countries where output-related criteria played an important role (Denmark, Netherlands, Poland, Sweden and the UK), these days there are 19 countries where elements of performance drive the budget of a HEI (Austria, Belgium/Flanders, Denmark, Germany, Estonia, Finland, France, Greece, Iceland, Italy, Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden and the UK).

For performance-based funding (PBF) approaches, two options, or a combination of the two, are usually in place:

1. budgets are based on actual results,
2. budgets are based on projected results.

An example of option 1 is where funding takes place according to a formula that is driven by the number of degrees or credits accumulated by students (quadrant Q2 in figure 1). An example that falls under the second option is the allocation of grants in a competitive process, such as through a research council, where research funds are selectively awarded to HEIs based on proposals (quadrant Q3). Such a system can be implemented for the funding of research, but it may also be designed to drive (part of) the recurrent funding for institutions as a whole. In the latter case, we speak of *contract funding*.

Contract funding is a trend inspired by New Public Management reforms (Pollitt & Bouckaert, 2000). Like PBF, it emphasises accountability and results, and in addition pays attention to differentiated institutional missions. Institution-specific performances and initiatives are laid down in contracts agreed between budget holders and budget receivers. Performance contracts between individual universities and the relevant funding authority define institution-specific (or ‘mission-based’) objectives in line with national strategic priorities. Contracts with institutions as a whole can be either very broad, based on framework agreements, or can be more detailed. Whereas formula funding often resembles ‘steering by looking in the rear view mirror’, a system of contract funding may provide a more future-oriented type of funding (Jongbloed, 2011).

Box 1 presents some examples of countries where contract-based approaches are employed. The design and the content of these performance contracts vary considerably across the different systems.

Box 1: International examples of contract funding approaches

- Australia: Mission-based compacts
- Austria: *Leistungsvereinbarungen* (performance agreements)
- Belgium-Flanders: multi-annual agreements
- Denmark: university development contracts
- Finland: performance contracts
- France: *contrat quadriennal*
- Germany – Nordrhein Westfalen: *Zielvereinbarungen* (target agreements)
- Hong Kong: Performance and Role-related Funding Scheme (PRFS)
- Spain - Valencia region: *à la carte* contract funding

In practice, we often see countries using a mix of funding options. Most countries base the majority of funding decisions on a formula, where the size of public grants for teaching and/or ongoing operational activity and, in certain cases, research is calculated based on a formula that includes input criteria (e.g. student enrolments, staff numbers) and/or performance indicators (e.g. credits, diplomas). As part of the total public funding, most countries award, next to the formula funds, also project funds. Often, such project funds may be granted on a competitive basis, but they may also be distributed more evenly across institutions (or organisational units).

An overview of higher education funding mechanisms across Europe reveals some clear tendencies:

- An overwhelming majority of countries make use of formula funding
- A growing importance of output measures in the funding formulas, next to input measures (which have the highest weight)
- An increase in the use of project funds to increase competition for (research) funding and to meet specific national goals (targeted funding)
- An increase in the use of contracts agreed between ministries and individual HEIs, where part of the HEI’s budget is tied to a performance agreement or performance contract.
- Most funding authorities allow considerable spending freedom (funding autonomy) to their HEIs and award budgets in the form of a lump sum.
- Funding for research is changing from primarily being formula-based (and linked to education funding) towards a system of output-based (quality-based) funding.

The extent to which these moves towards autonomy, performance contracts and performance-based funding have taken place varies enormously across countries.

COMPOSITION AND LEVEL OF FUNDING

Looking at the composition of funding, table 1 compares information on the three main revenue categories for public universities for 1995 and 2008. The categories are:

1. The *operational grant* allocated by public authorities for ongoing teaching and/or research activities;
2. *Tuition fees* (from national students and students from abroad);
3. *Third party funding* (all project and contract funding received from public, international and private sources, such as: research council funding, ministry programmes, EU funds, contract research, contract teaching).

Table 1 shows that there is a move towards a higher share of tuition fees and third party funds and a reduction of the share of the recurrent operational grant. This trend may be the result of deliberate reform policies, such as the raising (or introduction) of tuition fees, the introduction (or increase) of project funds, and policies to encourage the entrepreneurial activities of higher education institutions.

Table 1: Composition of revenues for public universities (European averages for 1995 and 2008)

	Share of Operational grant from public authorities (%)	Share of Tuition fees (%)	Share of Third party funding (%)
1995	78	8	15
2008	67	12	21

Source: CHEPS Consortium (2010a)

The proportion of national income that EU Member States spend on higher education varies considerably, as does the relative balance between public and private spending. In 2008, the average level of direct spending on higher education in the EU (including on research and development, excluding student support, public and private spending combined) was 1.3% of GDP¹⁵. The majority of expenditure on higher education comes from the public purse, although private expenditure is far from insignificant, rising to 0.7% of GDP or above in Denmark, Bulgaria, Cyprus and the UK. Spending on higher education in the EU is considerably lower than in the US, where total (private and public) investment amounted to 2.7% of GDP in 2008. OECD data shows that those countries that have been able to channel more than 2 per cent of GDP into higher education – the United States, Korea, Canada – all raise a substantial share of funding from private sources. Japan and Australia also have a high proportion of private expenditure.

Over the last decade, more countries have either introduced or increased tuition fees for students, even though public funding is and is likely to remain the dominant source of revenue. The Modernisation Agenda (EC, 2006; 2011) has suggested that EU member states ‘critically examine their current mix of student fees and support schemes in the light of their actual efficiency and equity’. Yet, in more than half of the European countries included in table 2, bachelor-level students pay only a modest fee or no tuition fee at all.

Table 2: Tuition fees for BA-level students and their order of magnitude (2009/10)

No fees	AT, CY, HR, CZ, DK, FI, EL, LU, NO, PL, SK, SE, UK-Sco
Low fees (below 500)	BE, FR, DE, MT, IS, TR
Moderate to substantial fees (above 500)	BG, IE, EE, IT, PT, LI, ES, CH, HU, NL, LV, LT, RO, SI, UK-Eng

Source: Eurydice (2011) and CHEPS Consortium (2010a)

¹⁵ See table 2, included earlier in this report (*Funding and the Modernisation Agenda*).

Diversifying sources of income has been advocated by many countries as well as by the European Commission. The EC's Modernisation Agenda (EC, 2011) sees both a large need and a great potential for HEIs to generate resources from (alliances with) the private business sector, from international fee-paying students and from an expansion of further education, part-time programmes, non-degree provision and other atypical activities. A study covering the 200 most research-active universities from 33 European countries (De Dominicis, 2010) shows that revenues from private companies represent about 6% of total revenue, the non-profit sector around 3%, and sources from abroad approximately 2%. The study also illustrates that universities with a high degree of autonomy are those with the most diversified budgets.

A 2010 CHEPS Consortium study (2010a) found that higher education institutions in 14 countries receive more than 25% of their revenues from "third party" funds (i.e. not directly from public sources). This trend appears to be well established and is intensifying, even in countries where public investment in higher education is increasing, such as Germany. Included in these third party funds are the project funds granted by research councils. These intermediary bodies award competitive project grants to academic research projects in universities. In the most research intensive universities, the share of the budget coming from competitive research grants is typically 15% to 22 % (Aghion et al., 2008).

We can also observe a trend of attaching new (additional) research funds to specific priorities selected by the funding authorities. This stimulates universities to undertake strategic research in priority areas. In almost all European countries such an increase in the share of project funds for research can be observed. An important issue is whether the changes in resourcing and resource composition have had an effect at the level of the individual university and whether developments in the national funding environment are mirrored by developments inside the universities. There is quite some evidence (Strehl et al., 2007; Lepori et al., 2007) that universities start to behave more like 'strategic actors' (Bonaccorsi et al., 2007) in trying to position themselves more clearly in the European university landscape. Some are clearly responding to the calls of European Commission to move away from models of uniformity and egalitarianism that emphasise traditional models of learning and research.

This brings us back to the discussion on governance reforms aimed at increasing the autonomy of HEIs in order to achieve more differentiation in the higher education landscape and to make HEIs more sensitive to the diverse demands of their stakeholders – public and private.

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11. INTERNATIONALISATION AND QUALITY ASSURANCE

INTRODUCTION

With internationalisation in higher education becoming part of the mainstream activities of many higher education institutions and continuously gaining in importance, there is a growing expectation that universities be able to define the added value of the international dimension. Accordingly, there is some growth in the attention paid to measuring the impact of internationalisation on the institutional mission. In Europe, internationalisation has gained additional prominence as it is seen as an aspect of modernising European higher education in an increasingly Europeanised and globalised context (Altbach and Knight, 2007; Amaral, Neave, Musselin, and Maassen, 2009; Marginson and van der Wende, 2007).

In ‘standard’ quality assurance processes, attention to internationalisation’s quality remains limited. Quality, even without adding the complication of ‘internationalisation’, remains a controversial concept with a range of definitions and purposes, and ways to measure it—whether it is conceived as excellence, fitness for purpose, value for money or the ability to transform students.

Another challenge lies in balancing accountability, i.e. the need for trustworthy external quality control to assure external stakeholders of a bottom line of quality, with enhancement, i.e. the need for a creative evaluation structure and culture that stimulates institutional learning and improvement.

Quality assurance in internationalisation should be able to provide reliable information on institutional performance while taking into account the diversity of institutional missions and profiles. This proviso about mission is especially relevant in regard to internationalisation, because it is not a function taken up equally in all higher education institutions.

The main questions addressed in our full report included:

- How can the quality of internationalisation be assured?
- Which instruments are available?
- What are current experiences and what should be action lines for the future?
- How do we know that internationalisation is achieving its goals?

A few more introductory remarks about the core concepts of quality assurance and internationalisation are in order, however.

QUALITY AND QUALITY ASSURANCE

However quality may be conceived, it has to do with the *performance* of higher education institutions in education, research and the ‘third mission’, as well as with the *satisfaction* of stakeholders (internal and external) with those performances. Controversies include whether attention should focus on threshold levels of quality, or conversely on achieving top levels (‘excellence’).

The quality of education and its assurance have gained importance over the last decades, and practically all higher education systems in the European Higher Education Area and most other world regions now operate quality assurance schemes (Eurydice, 2010; Westerheijden et al., 2010). *Quality assurance can briefly be defined as (recurrent) practices to evaluate the quality of some of a higher education institution’s activities, and the structures associated with these practices* (Westerheijden, 2010).

External quality assurance on programme, institutional and supra-institutional levels is coordinated by national as well as international quality assurance schemes established by quality assurance agencies. The supra-institutional level also allows for benchmarking and comparison. Benchmarking may have two aspects: one is setting a standard (an external one), and the second concerns a learning process within the higher education institution, in open communication with other higher education institutions, to emulate best practices with regard to internal processes that impact on performances addressed in quality assurance exercises (ESMU, 2008, 2010). *Comparison* since a few years increasingly focuses on institutional performances as they appear in *rankings* (van Vught and Ziegele, 2011).

Quality schemes mostly reflect priorities and characteristics of the higher education system in which they are embedded; in other words, they reflect national policies etc. The context thus drives the indicators by which quality is measured. As a consequence, indicators developed for one quality assurance system might only be applicable to a certain extent in other countries' quality assurance schemes. Accommodating the diversity of universities within a system is an additional major challenge in supra-institutional quality assurance schemes. Quality assurance systems may reduce (desired) diversity in higher education systems if they impose uniform measures, because 'what gets measured gets done'.

Indicators can be divided into the following categories:

- Inputs: Staff numbers, staff qualifications, facilities
- Process: delivery of curriculum, student satisfaction
- Outputs: Retention rates, success rates, drop-out rates

QUALITY ASSURANCE IN THE BOLOGNA PROCESS

The Bologna Process has not only encouraged the internationalisation of higher education as such, but also of quality assurance (Westerheijden, et al., 2010). In addition, a number of EU projects have supported and furthered this development. Until the early stages of the Bologna Process, most attention went into national quality assurance arrangements: the development of agencies, legal frameworks, criteria and indicators (Schwarz and Westerheijden, 2004).

In 2005 the European Standards and Guidelines for Quality Assurance in Higher Education (ESG) were established (European Association for Quality Assurance in Higher Education, 2005, 2009). These guidelines consist of three parts, of which the first is most relevant for higher education institutions, because it defines which areas must be included in their quality assurance arrangements:

- Policy and procedures for quality assurance
- Approval, monitoring and periodic review of programmes and awards
- Assessment of students
- Quality assurance of teaching staff
- Learning resources and student support
- Information systems
- Public information

Note that internationalisation is not mentioned in the ESG Part 1. It is at most assessed through standards on internationalisation of the curriculum and perhaps through quality of teachings staff.

Part two of the ESG defines external quality assurance through for example quality assurance agencies and part three covers the quality assurance of these agencies.

To further cooperation between quality assurance agencies and to establish a certain harmonisation of quality assurance procedures throughout Europe, the European Quality Assurance Register for Higher Education (EQAR) was established (www.eqar.eu). The umbrella organisation of quality assurance agencies, the European Association of Quality Assurance Agencies (ENQA, www.enqa.eu), was deeply involved in the development of the quality assurance policies in the framework of the Bologna Process.

In addition the European Consortium for Accreditation in higher education (ECA, www.eaconsortium.net) has been established by a number of accreditation agencies with the main aim of mutual recognition of accreditation and quality assurance decisions. Currently twelve bilateral mutual recognition agreements have been concluded among quality assurance agencies from eight European countries.

Our report also provides a number of case studies of national quality assurance agencies and their different approaches e.g. the institutional audit approach from the UK's Quality Assurance Agency or the evaluation per study programme developed by the Flemish-Dutch NVAO. None of the studied approaches, however, mention internationalisation as one of their key components.

A quality label that explicitly evaluates internationalisation on all levels is the EQUIS (European Quality Improvement System) label developed by EFMD for the accreditation of business schools.

INTERNATIONALISATION

Internationalisation of higher education has also gained importance over the last decade and, in response to globalization, has developed into a key element of many higher education institutions' missions. Internationalisation has become an integral part of university strategy; in good practice cases, it is no longer a separate area unconnected to the other components of a university's mission.

The rationales for internationalisation are manifold (academic, social, cultural, political, and economic). The different rationales also lead to actors giving different answer to the question: what is internationalisation meant to achieve? Obviously, as in the case of quality, different conceptions of the term imply different ways of measuring internationalisation's achievements.

The definition for internationalisation used in our report is one of the most common definitions used in the literature: *The process of integrating an international, intercultural or global dimension in the purpose, function and delivery of postsecondary education* (Knight, 2004).

As mentioned, this process is driven by a number of different rationales. Among these, the economic rationale (income generation) has gained in importance in the last decade, especially in countries where foreign students pay full-cost fees. Economic arguments are also sometimes connected with national governments internationalisation strategies for reasons such as demography or stimulating institutions to generate additional resources to substitute for reduced state funding.

Internationalisation is realised in a number of different activities, which can be subsumed under two headings:

- Internationalisation at home: activities that help students develop international understanding and intercultural skills in their home institution, including internationalisation of curricula, campus life (e.g. mixing with international students) and education (e.g. international teaching staff).
- Internationalisation abroad: all forms of education crossing borders: mobility of students, teachers, scholars, programmes, courses, curriculum, projects.

INTERNATIONALISATION ABROAD AND MOBILITY

Student mobility is the activity most associated with internationalisation abroad. The mobility of students has developed over the years (e.g. aided by mobility programmes and schemes) and can nowadays be divided into the following subgroups:

- Credit mobility (also short term mobility or horizontal mobility): Students follow a short term of their studies abroad e.g. as part of the ERASMUS programme and gain credits valid at home for modules completed during this stay.
- Diploma mobility (also vertical mobility): Students complete a diploma or degree in a foreign higher education institution.

Widespread use of these two terms should not close our eyes to the fact that these terms are often interpreted differently and that the measurement of student mobility is still difficult, partly due to different interpretations and partly through different administrative definitions and procedures (e.g. connected with visa regulations).

Besides counting the numbers of mobile students, it is also important to measure the impact of student mobility. The crucial issue is what impact a study abroad period has on students and their personal and professional development and, moreover, how these influences can be measured. Similar questions could be asked around the mobility of staff. With regard to staff mobility, data are even scarcer than those concerning student mobility.

With increasing international competition among higher education institutions, both reflected and spurred by global rankings, these issues become increasingly important.

INTERNATIONALISATION AT HOME AND THE CURRICULUM

Internationalisation at home provides students (mobile as well as non-mobile) with an international experience within their home university environment. Moreover, universities are required to be active internationally in order to be competitive and more attractive to students, research contractors, etc.

An international campus can be achieved through, for example, the following:

- Content, e.g. literature, language learning
- Methods, e.g. peer learning (with international students), innovative pedagogies, ICT use (web learning, communicating abroad or using teaching materials from abroad)
- Delivery, e.g. language of instruction (through international teaching staff)
- Services, e.g. student support services

INTERNATIONALISATION AND THE BOLOGNA PROCESS

The Bologna Process and its two main goals, i.e. establishment of the European Higher Education Area (EHEA) and the promotion of European higher education, have given the internationalisation of Higher Education an additional impetus. Four of the Bologna action lines concern core activities of internationalisation:

- Mobility
- Recognition
- Joint degrees
- Global dimension

Other action lines also have close links to internationalisation. The Bologna Process supports internationalisation instruments such as ECTS as the credit currency, National Qualification Frameworks under the European Qualification Frameworks (QF-EHEA as well as EU's EQF) and the Diploma Supplement.

INSTRUMENTS FOR QUALITY ASSURANCE OF INTERNATIONALISATION

The overview of current practices in quality assurance showed that internationalisation is not a major area of interest in current quality assurance schemes. However, internationalisation and quality assurance have become increasingly linked along three major dimensions:

- Quality assurance of internationalisation
- Quality-added due to internationalisation of higher education
- Internationalisation of quality assurance

The latter two issues have been alluded to above. Attention now should turn to the former element. A strategic question is whether the quality of internationalisation should be measured and analysed in a separate process, or whether it ought to be part of the overall quality assurance process. In view of the lack of attention to internationalisation in most quality assurance processes, separate models to measure and assure the quality of internationalisation were developed and implemented as a first step.

One of the early efforts was made through IMHE/OECD's 'Internationalisation Quality Review Process (IQRP)', which operated from 1994 to 1998. The process included pilot peer reviews in institutions in different parts of the world (Knight and de Wit, 1999). The IQRP however did not gain enough support to remain viable.

The process was based on a self-assessment tool for the institution and an external peer review. The IQRP was a self-improvement exercise rather than a benchmark exercise. The IQRP proposed to evaluate internationalisation along six dimensions:

- Internationalisation policies and strategies
- Organisational and support structures
- Academic programmes and students
- Research and scholarly contributions
- Human resources management
- Contracts and services

Furthermore, during the years of implementing the IQRP the emphasis of quality assurance expanded from its original focus on the questions of 'why?' (motivation) and 'how?' (process), to including questions on 'what for?' (goal) and on the achievement of goals (performance).

The IQRP was followed by other projects and publications in the area of internationalisation that paid attention to measuring its quality. At the conference on internationalisation and its quality assurance that was part of the MODERN project, Professor Hans de Wit listed a number of them. The following conclusions were drawn from De Wit's presentation:

- There appears to be a need for quality assessment of internationalisation strategies in higher education
- In particular in the USA and Europe, but also in Japan, several instruments have been developed over the past 15 years to assess their mission-based quality. The conference showcased an example of a Dutch online instrument for this, MINT.
- These instruments borrow ideas and instruments from each other and use more or less the same programmatic and organisational categories
- They focus on input and output assessment
- They are mainly directed at the institutional level
- They address the state of the art and/or the process for improvement
- Some exercises in benchmarking have created databases for comparison and learning from best practice regarding internationalisation. An online tool to identify good practices fitting in a particular context was mentioned (from US-based NAFSA).

It has been shown that value added in terms of learning outcomes for students has become the focus of attention regarding the measurement and evaluation of internationalisation. The literature however suggests that definitions of learning outcomes and associated indicators are not easily developed and that different sources take different approaches to them.

Crucial questions that remain to be answered include what internationalisation is expected to do to students? What does it mean to train students to become European and global citizens? Should added value from internationalisation apply to all students in the same degree? The question of how to measure internationalisation's quality can only be answered satisfactorily once it is known whom different indicators are aimed at and for which type of decisions they are intended.

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12. TOWARDS A STRATEGIC MANAGEMENT AGENDA FOR UNIVERSITY KNOWLEDGE EXCHANGE

In contemporary societies knowledge has become increasingly valuable. The increasing importance of knowledge presents a great opportunity for universities and higher education institutions (HEIs). But with higher education and research consuming increasing proportions of national wealth, policy-makers and governments are seriously asking the question of whether they are getting good value for money. In this context, governments have attempted to increase universities' wider societal contributions.

It is now commonplace to talk of the idea of a 'third mission' for universities alongside their teaching and research activities, contributing to social, economic and cultural as much as to academic development (e.g. Quotec, 2009). Jongbloed (2007) highlights a proliferation of attempts by governments, academics, learned societies and think-tanks to develop indicators and measures for this third mission. The U-Map (2008) and U-Multirank (2010) projects have devoted substantial effort in trying to develop effective measures for ranking and profiling universities according to this third mission output. But there has been no unanimity about constitutive effective measures for the third mission. The problem is in part definitional around the idea of a third mission. We argue that the lack of agreement as to the nature of the third mission makes it hard to define, incentivise and measure excellence in the third mission.

This contribution summarises the main aspects of the Modern report "Towards a strategic management agenda for university knowledge exchange" (ESMU, 2011), which provides a framework for understanding universities' knowledge exchange activities through the gamut of activities in which they are involved. The conceptual framework is meant to further our understanding of knowledge exchange in order to help institutional efforts to create a strategic agenda for societal engagement. It seeks to understand knowledge exchange, and in particular, how knowledge exchange works in the interests of the institution and its key stakeholders. Simply put, knowledge exchange lies at the heart of everything that universities do; at the same time, its cross-cutting nature can lead to its neglect in favour of more obvious, measurable and manageable missions. We place this problem into context, then create a framework for it in an age emphasising university management based on strategic focus, clarity, efficiency and accountability.

WHAT IS KNOWLEDGE EXCHANGE?

Knowledge exchange can be regarded as a foundational principle of universities: without knowledge exchange, researchers become solipsistic, self-referential and ultimately weaker, whilst teaching quickly becomes out-of-date. Universities cannot function without effective knowledge exchange, which is where a whole range of knowledge exchange relationships are held together in a single institution. Knowledge exchange is – very simply defined – where universities create and circulate knowledge, involving other partners in those creation and circulation processes. Managing knowledge exchange better requires understanding what knowledge exchange is, where it is taking place, the mechanisms where it occurs and its underlying logic.

Knowledge exchange is a style of handling knowledge circulation processes. The one activity which is unique to and defines the institution of university is the production of knowledge through set of overlapping processes which we refer to for the sake of simplicity as the knowledge circulation process (Allen, 1988).

- Universities create that knowledge, directly through research and indirectly through scholarship.
- Universities store that knowledge both in terms of their libraries, archives, museums, collections but also in the memories and skills of their faculty.
- Universities impart knowledge to students through the direct education process and the wider student experience.
- Universities circulate knowledge by publications, conferences, broadcasting, public relations, dealing with journalists.

- Universities apply their knowledge in different contexts through consultancy, advice, expert positions.
- Universities also remove redundant, out-dated or false knowledge by maintaining academic communities collectively challenging knowledge and assumptions.

The locus of these knowledge processes is not exclusively within the boundaries of the university. There are a range of different actors involved in these knowledge processes, including students, firms, public sector organisations, arts audiences, cultural visitors, community groups, policy-making bodies, learned societies and governmental inquiries. Successfully creating knowledge depends at least in part upon managing relationships with these external bodies.

Knowledge exchange evolved as a concept through attempts to understand university-society interactions. The first concept to emerge was “technology transfer”, that universities could pass ideas and technologies that they had developed on to businesses who could then exploit them (CERI, 1982). The weakness in this idea was that it was clear that ‘technology’ was a very restrictive description of the essence of what passed from universities to external actors. From this came the idea of knowledge transfer, that it was knowledge in the round rather than just technology which passed to business.

But closer analysis revealed that there was not just a transfer of knowledge from universities to other actors, but that other actors also brought their own proprietary knowledge to these relationships (Nonaka and Toyana, 2003). The concept of ‘knowledge exchange’ emerged to better capture what is important about these relationships. By placing it in the lineage of ideas from technology transfer to knowledge exchange makes clear that knowledge exchange is not itself intrinsically valuable, but it is a way of understanding, and hence reacting to, external interactions in knowledge processes that are important to universities.

These interactions might come at all stages of the process: working with research partners in creating new knowledge, placing students and graduates into firms to transmit knowledge from university to business, letting local businesses use their university library, hosting high-technology spin-outs in science parks or encouraging staff to volunteer in local voluntary and community sector activities. The exchange element of knowledge exchange comes in the interaction by university staff and students with actors that have other kinds of knowledge that increase the scope of the knowledge that is produced.

Knowledge exchange is not specifically about the third mission of universities. The idea of the third mission emerged in the 1980s out of a growing dissatisfaction with linear models of innovation (Laredo, 2007). Studies demonstrated that innovation was far more interactive and non-linear than this model supposed (Kline and Rosenberg, 1986). This fitted with an argument that universities should be involved throughout the knowledge creation and exploitation process. This suggested a ‘third’ mission for universities alongside blue-skies research and teaching. Interactive knowledge production became seen as synonymous with the university ‘third mission’. But the reality is that the linear model was always far more a political project than an accurate description of how knowledge was produced (cf. Bush, 1945). Universities’ various knowledge activities always to some extent involved interaction with external partners. But by association with the third mission, knowledge exchange became saddled with a sense of being part of a contentious political project to change the nature of universities, and to give them an additional mission.

Knowledge exchange however, is not something exclusively associated with universities’ commercial transactions. Neither is it something that has no salience for universities’ other activities, because some degree of knowledge exchange can be found in almost all university activities. Finally, knowledge exchange is not exclusively a new process: it has not become valuable exclusively to deal with modern challenges.

KNOWLEDGE EXCHANGE, NEW PUBLIC MANAGEMENT AND UNIVERSITY MODERNISATION

There has been in the last decade or so a growing recognition of the importance of knowledge to social and economic development. The European Commission and national governments have been looking to universities to support that development. In doing so, they advocated New Public Management (NPM) approaches aimed to modernise higher education institutions. NPM is a very effective tool for encouraging and optimising provision what Gunasekara (2006) calls 'generative' outputs: well-understood, tangible outputs with clearly defined users. NPM is less effective at stimulating those kinds of activities that are weakly defined or where there is no strong customer. Knowledge exchange is a quintessential example of such a vague activity, because it is embedded into so much of what universities are doing, and at the same time, there is a high level of abstraction in terms of the beneficiaries and benefits.

The effect has been to focus on short-term goals for which the progress towards can easily be measured at the expense of longer-term activities or those lacking easily measurable indicators. This has reinforced an unwelcome tendency amongst governments – and universities – to focus on a very narrow version of knowledge exchange, based on commercialisation and technology transfer (Benneworth and Jongbloed, 2009). Technology transfer is relatively easy to manage as a discrete task but is only one part of the knowledge exchange story.

The problem for knowledge exchange is that it is such a ubiquitous activity, it risks being taken for granted and overlooked. It takes place through human relationships, which are complex and context-dependent activities. This raises the challenge of co-ordinating human behaviour in a single institution across many activities with very different contexts.

Knowledge processes are fundamentally social processes: although some knowledge can be easily codified and transmitted over space, the most useful kinds of knowledge are produced interactively (Paavola et al., 2004). This social process requires interaction between people, with co-operation built on trust between actors.

At the same time, universities are under pressure to compete more vigorously with one another, a consequence of the 'marketisation' in higher education. Payment by results places institutions under pressure to be able to demonstrate that results 'belong' to them, which is not a good foundation for building trust. Management techniques developed to steer internal actors may be inappropriate for the steering of activities involving external parties. Universities run the risk that other partners seek to 'free-ride' on them and ensure that they benefit more from the relationship than do the universities. But these are risks that have to be dealt with if universities are to effectively participate in collaborative knowledge processes and make sure that knowledge exchange helps promote the university's strategic interest.

Universities clearly find themselves in a very challenging environment, calling for sophisticated strategic management. A number of distinct elements for a strategic management agenda for knowledge exchange can be identified:

- The development of an institutional strategy which co-ordinates activity within the institution to best position itself for future change.
- Developing institutional expertise in understanding the environment and as well as institutional capacity for knowledge exchange.
- Identifying a set of tangible outcomes to be delivered through the strategy which will configure the institution to be most successful into the future.
- Ensuring that the activity does not itself become pigeonholed as a third-stream activity besides teaching and research, but changes the way that these two core activities create social connectivity.

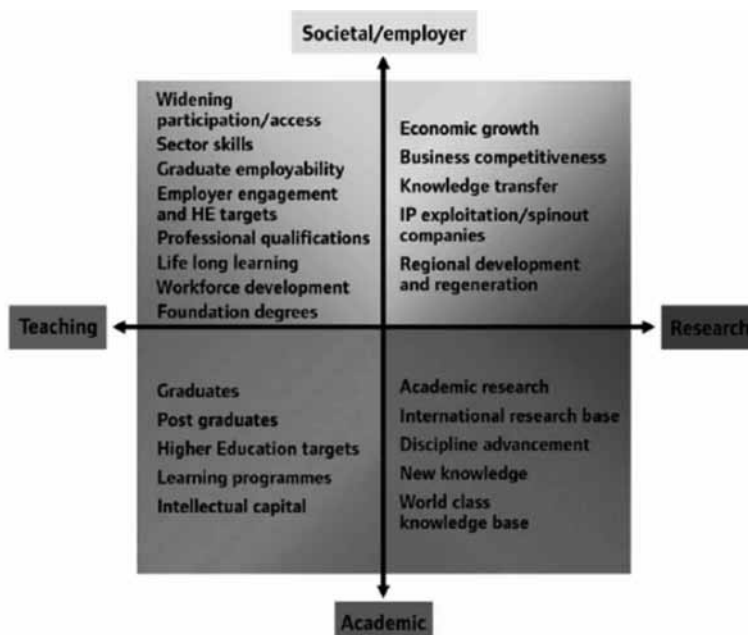
Much is said about knowledge exchange which attempts to create a sense of urgency for change: policy-makers feel universities are not contributing enough so changes in the world are presented as requiring a dramatic change from universities. This is a challenge or threat to universities, demanding a new kind of institutional mission, and that universities pay attention to new stakeholders' voices, potentially impinging on their academic and institutional freedom. Abreu et al. (2010) make the argument that this situation is a result of an excessively narrow focus on knowledge exchange activities. The focus on commercialisation activities – licensed research, patenting, spin-outs and running consultancy businesses – produces the impression that only a minority of academics are engaged with external organisations.

The breadth of activity within which the university is involved in knowledge exchange poses a challenge in terms of generating a strategic knowledge exchange agenda. If universities are to make the most of knowledge exchange, then that activity must be aligned with institutional strategic priorities. The “knowledge exchange challenge” for universities can be conceptualised as developing a strategic agenda which strengthens knowledge exchange within existing university activities. A first useful step on this journey can be taken by institutions better understanding what knowledge exchange is, how they use it, and then reflecting on the strategic opportunities it offers for universities. The practice of how this will be achieved varies between institutions. In an age where different universities are adopting different profiles, these different profiles determine the kinds of activities they undertake.

KNOWLEDGE EXCHANGE IN A KNOWLEDGE SOCIETY CONTEXT EXTERNAL PRESSURES: THE RISE OF MODE TWO AND THE TRIPLE HELIX?

There are at least three sets of changes that influence the expectations placed on universities. First, technological development and globalisation have created new opportunities for interaction and knowledge exchange at a distance, and universities have adapted to these changes. Second, systems of government have evolved, with governments increasingly withdrawing themselves from the provision of services and contracting with providers to ensure the most efficient provision of societal services. Third, governments are becoming increasingly aware of a new class of intractable problems, including demographic ageing, climate change and resource scarcity, and are looking to their knowledge producers to contribute to solving these problems. These various pressures have come together to create a sense that the traditional way universities creating societal knowledge have changed, and that universities should conform to their roles in these new models. Figure 2 depicts the multiple pressures and expectations placed on universities (Wedgewood, 2006).

Figure 2: Multiple parallel pressures and expectations placed on universities



Source: Wedgewood (2006)

It has been common in recent years to make the argument that there has been a sea-change in the way that knowledge is used as a consequence of these various parallel shifts. Gibbons et al. (1994) described this change as the shift from 'mode 1' to 'mode 2' science. Mode 2 was knowledge production in ways that followed a logic of use, oriented towards the solution of externally-specified problems. Part of the reason for the popularity of the idea of a shift from Mode 1 to Mode 2 was that it was greatly attractive for politicians because of a strongly normative foundation in the idea of 'useful knowledge' (Novotny et al., 2003). It was also highly attractive for particular kinds of academics, those engaged in multi-disciplinary research, applied research, consultancy activities or even new disciplines which were hitherto having difficulties in establishing themselves. The Mode 2 model has subsequently been criticised from many directions, with Etzkowitz (2008) arguing to more explicit look at government policy intervention in university-society relationships, terming this a 'triple helix' set of relationships.

The claims that universities used to be ivory towers which have little external interactions are questionable: universities have always been engaged to some degree with external users, and actively engaged in knowledge exchange. It may be that universities should be paying more attention to actively managing their knowledge base and stimulating more knowledge exchange.

INTERNAL PRESSURES: STRATEGIC MANAGEMENT OF DIVERSE ACTORS

Rather than directly specify tasks for universities, governments are now moving to articulating the outputs desired from the system, and leaving it to universities to best achieve those. This has stimulated university managers to think about their institutions as coherent entities, ensuring their various elements work together effectively to secure institutional survival. This has placed a premium on developing a common understanding of what the university is, what are its purposes, and how they will be achieved in a competitive resource environment. This has led to the rise of strategic management in universities.

The advantage of the approach is its simplicity, in freeing universities from burdens of state management and allowing them to determine their own strategies for survival and success, thought to maximise the chance for efficiency and innovation. But at the same time, this simplicity can be misleading. To deal with competing demands between internal actors, universities have been forced to simplify their outputs, to be able to gauge progress towards common targets, and how different elements of the university are contributing to the university's mission. This has been reinforced by a tendency to pursue missions and goals which are directly rewarded by funders, but which in combination can produce perverse and undesirable outcomes.

It is important to stress the risk in knowledge exchange of imperfect signalling, and in particular, in misunderstanding funders' intentions. Because knowledge exchange is diffused across all HEI activities, it is highly volatile and vulnerable to policy interventions. Under such circumstances, reacting in a short-term way to policy instruments and policy-makers' statements can lead to a failure to properly appreciate and react to more substantial long-term and environmental changes.

KNOWLEDGE EXCHANGE AND UNIVERSITY STRATEGIC MANAGEMENT

In applying strategic management to universities, and particularly in the field of knowledge exchange, there are three implications which come to the fore. The first is that knowledge exchange in universities takes place through many different kinds of activities at once. Such a broad spectrum of activities makes their strategic management extremely tricky. A key requirement of effective strategic management is in being able to co-ordinate between these different activities. Knowledge exchange falls clearly within the category of activities that are very difficult to measure, because of many problems with the kinds of indicators that might be used.

The diversity of knowledge exchange contributes to the problem of an absence of good variables and indicators for the strategic measurement of it (Jongbloed and Benneworth, 2011). Whilst it is possible to develop detailed measures for particular activities (for example numbers of articles in the press written by university staff), those detailed measures are too general to be of use in a management sense. Measures which were sufficiently comparable, such as staff time or event attendance, are too precise to be of use for different kinds of activities. Concrete variables, such as such as co-patenting activity, are too remote from the real activities that universities were undertaking to represent sensible indicators (Crossick, 2006; 2009).

The second implication is that universities have different degrees of control over these different processes. Universities are largely in control of their direct teaching activities, but it is much harder for universities to guarantee their knowledge transfer activities in a similar kind of way, because much of that is dependent on the absorption capacity and inclinations of external actors. Universities have for instance much less control over the demand for that knowledge, and in particular, the policy incentives and subsidies that may stimulate firms to work with universities (Benneworth, 2010).

The third implication is that the starting point for a knowledge exchange process has to be the value of those engagements to the university itself. Knowledge exchange has value to academics and students in improving the quality of particular learning and research processes. Effective knowledge exchange takes place through activities which deliver benefits both for universities, and for outside stakeholders. Effectiveness can be understood in terms of activities which serves these joint interests.

Understanding effective knowledge exchange requires understanding these interests, and how they come together in particular concrete activities. We take into account the interests of universities, the interests of stakeholders and the mutual benefits of collaborations (see below).

THREE RATIONALES FOR UNIVERSITY KNOWLEDGE EXCHANGE

There are three kinds of value for universities for knowledge exchange: intrinsic (improving the quality), extrinsic (helping universities to access resources that would not otherwise be accessible) and narrative (demonstrating that universities are doing particular things that other stakeholders value) ones.

The **intrinsic value** of knowledge exchange for universities is that it improves the quality of the knowledge creation and circulation processes. Knowledge exchange's intrinsic value is in providing access to resources which facilitate knowledge production and circulation – accelerating research efforts, raising the quality of knowledge produced, and generating interesting questions. A distinction can be made in the way knowledge circulates between codified and tacit knowledge. Codified knowledge (know-what and know-why) is knowledge – such as facts and theories – which can circulate in artefacts such as text books and journals, and whose transmission is mediated through those artefacts. Tacit knowledge (know-how and know-who) is knowledge of how to make inductive choices in complex problem situations, knowing which strategy or partner can best help in solving a particular problem. Tacit knowledge is experiential and socialised –inductive knowledge can be transmitted and created through socialised learning experiences where partners work together to solve problems, each contributing their own inductive insights to solve a problem (Malecki, 1997). Knowledge exchange's intrinsic value does not relate exclusively to research, but it can relate to any knowledge process undertaken by a university.

The **extrinsic rationale** is that knowledge exchange produces a wider set of benefits for a university that are not directly related to the production of that knowledge through exchange. What knowledge exchange provides universities with is a set of contacts and linkages, and those linkages prove useful in other contexts. Effective management of knowledge exchange needs therefore to be aware of the possibilities of exploiting those contacts. There are a variety of means by which these links can help to promote universities' wider interests and activities without relating directly to the knowledge circulation process. Links with outside partners are important to indicate the value of research, to create placements for staff and students, to gain support and to share values.

The **final value** of knowledge exchange by universities – the narrative rationale – is in the process of social value creation that in turn justifies the public benefits and privileges enjoyed by universities. Part of this are universities collectively telling a story about the value of higher education and research, and sustaining public support for what is now an increasing proportion of public expenditure. This has both general and specific elements: universities can condition publics to support the value of their activities, as well as more directly helping to satisfy and convince government bodies that universities are valuable for their host societies. The role for knowledge exchange is in making tangible to politicians and policy-makers the benefits that universities bring, through their spin-off companies, the patents and the employed graduates, whilst also demonstrating a tangible link between those activities and infrastructures and activities which directly relate to the university's core mission (Benneworth and Hospers, 2007).

OPERATIONALISING KNOWLEDGE EXCHANGE: A STAKEHOLDER APPROACH

The other dimension of university knowledge exchange is the interests of outside parties. It is important to understand more comprehensively who these outside partners are, through what mechanisms it might take place and what the stakeholder interest are.

Applying a stakeholders perspective ((Ackoff, 1981; Freeman, 1984) to university knowledge exchange, university stakeholders are those who wish to benefit from exploiting university knowledge which they acquire through a process of interaction. The effectiveness of the relationship (and in this case the effectiveness of the knowledge exchange) depends on the extent to which the mutual interests of the organisations coincide, and the relative balance of power between the actors (Mitchell et al., 1997). Stakeholders in university knowledge exchange have an interest in acquiring the knowledge, and a dependence through needing to work with the university to acquire that knowledge.

The table below, taken from Burrows (1999) sets out a comprehensive list of universities' external stakeholders. This covers all those actors with an interest in the university at any level. There is a sub-set of these stakeholders who have interests in interacting with universities around knowledge exchange.

Table 3: Stakeholder categories and constitutive groups

Stakeholder category	constitutive groups, communities, etc.
Governing entities	state & federal government; governing board; board of trustees, buffer organisations; sponsoring religious organisations
Administration	president (vice-chancellor); senior administrators
Employees	faculty; administrative staff; support staff
Clientele	students; parents/spouses; tuition reimbursement providers; service partners; employers; field placement sites ...
Suppliers	secondary education providers; alumni; other colleges and universities; food purveyors; insurance companies; utilities; contracted services
Competitors	direct: private and public providers of post-secondary education potential: distance providers; new ventures substitutes: employer-sponsored training programmes
Donors	individuals (includes trustees, friends, parents, alumni, employees, industry, research councils, foundations,...)
Communities	neighbours; school systems; social services; chambers of commerce; special interest groups...
Government regulators	Ministry of Education; buffer organisations; state & federal financial aid agencies; research councils; federal research support; tax authorities; social security; Patent Office
Non-governmental regulators	foundations; institutional and programmatic accrediting bodies; professional associations; church sponsors
Financial intermediaries	banks; fund managers; analysts
Joint venture partners	alliances & consortia; corporate co-sponsors of research and educational services

Source: after Burrows, J. (1999) in Benneworth & Jongbloed (2009).

Involvement of external partners is not a cost-free activity for universities, because of the displacement effects which partners may bring and the costs of managing their demands (Durant, 2008). But when benefits exceed such costs universities should engage with external stakeholders. Stakeholder theory suggests there are three practical reasons for universities in engaging with external stakeholders, or at least why universities would choose to bear the costs of engagement in knowledge exchange:

- **Funding:** these are the financial resources which help universities to do things that would otherwise not be possible; this is unlikely to increasing the volume of activity of things already, but to providing the university with new strategic opportunities, infrastructure and assets which could not otherwise be internally funded.
- **Legitimacy:** universities have a general 'license to practice' in their activities based on being responsible institutions; but in some cases, that general license to practice does not hold, particularly where there are moral or ethical considerations, and knowledge exchange may engage partners who provide that ethical justification which allow interesting if contentious, activities to be pursued.
- **Urgency:** these are capacities which relate to shifting the political and cultural situation of particular activities; universities always have many opportunities of interesting things to fund with potential social benefits, but external partners may be able to establish the wider social interest of these activities by claiming (for example) that the universities provide the missing link towards creating an interesting activity.

It is possible to consider a number of ways in which universities might make their knowledge available to external actors, providing access to equipment, bespoke training, consultancy, advice and solutions to actors' problems. These in turn each correspond to a number of concrete mechanisms and activities by which knowledge exchange processes take place. The US Office of University Partnerships defined seven types of activity through which universities could engage with outside actors:

- **Service Learning:** students do social placements in return for credit
- **Service Provision:** longer-term targeted initiatives directed towards a specific group.
- **Faculty involvement:** academics working directly with business in knowledge transfer
- **Student volunteering** driven by students and unrelated to course credits
- **Open learning,** allowing community partners to undertake specific course
- **Applied research** identifying, diagnosing and solving particular partners problems
- **Major institutional change** reorienting the institution to better support a social group.

KNOWLEDGE EXCHANGE THROUGH MUTUAL BENEFIT

An issue of central importance in understanding how universities might work together is the issue of mutual dependence – knowledge exchange is not a unidirectional transfer, but rather an interaction dependent on relationships. Effective relationships build up where there are mutual dependencies, which is to say that both the universities and other actors are stakeholders in one another.

It is possible to develop a classification of the modes of interdependence between stakeholders on the basis of the kinds of interdependencies which exist between universities and their stakeholders around knowledge exchange. An outline classification is provided in the table below, which is primarily illustrative rather than comprehensive. Of course, it is possible for actors to have multiple resource interdependencies: for the sake of simplicity, the table below illustrates only a situation where there is one mutual dependency between the stakeholders.

Table 4: Modes of interdependence between universities and external stakeholders in knowledge exchange activities

Partner University	Resources	Legitimacy	Urgency
Resources	Research laboratory: <i>Co-investment in shared infrastructure for partnership working and commercialisation.</i>	'Field research' station: <i>based in fragile area together with actors with local knowledge.</i>	Making a difference: <i>Helping a locality come to terms with a (natural) disaster, supporting resilience and recovery.</i>
Legitimacy	Corporate laboratory: <i>Investment in semi-autonomous research institution or named laboratory that creates corporate goodwill.</i>	Ethical research: <i>Collaborative blue skies research projects with wider public ramifications (e.g. GM technology).</i>	Lobbying: <i>Working together to create a case to government for further research and action in the area.</i>
Urgency	Taking the next step: <i>A university discovery of potentially ground-breaking magnitude that needs further research work to prove the concept.</i>	Acquiring consent: <i>University research activity with contentious ethical ramifications supported/legitimated by involved actors.</i>	Public interest: <i>Working together to address 'grand challenges' and urgent societal problems, generating momentum for public funding.</i>

Source: ESMU (2011)

Knowledge exchange relationships have a social dimension, and that this social dimension is vital to creating the commonalities necessary for the knowledge exchange. But not all knowledge exchange requires relationships – the more routine and codified the knowledge transaction then the less depth of relationships – and the less social capital, proximity, collective identity or social cohesion are required. It is possible to consider a spectrum from relatively simple transactions to complex and ongoing relationships. For instance, in a straightforward piece of technology transfer, it might suffice that the university and business have experience of working with other sectors, speak a common language and have a shared technical disciplinary background. But research centres developing shared research programmes between businesses and academics will typically require a much more intense, ongoing and negotiated set of relationships, with multiple arenas where tensions can be discussed and addressed.

Relationships related to more complex forms of knowledge exchange often develop over time and there is a need to retain an alignment in the interests between participants as the relationship unfolds. The more complex those relationships, the greater the need for strategic coupling of those interests. Effective knowledge transfer operates when there is an alignment of partners' interests held by partners, and they provide appropriate capacity for the kinds of knowledge exchange involved. Immediate, private interests are most amenable to simple transactions; longer-term, public interests are useful to holding bigger knowledge exchange projects together, and developments such as urban science, creating new urban-based innovation ecosystems, need effective embedding in longer-term relationships based on mutual trust and shared collective interests.

Individual actors may themselves have different kinds of interests. These interests can be considered along two dimensions; there are long-term versus short-term dimensions, and there are public benefits as against private benefits. A university might have long-term interests in both developing new income streams (a private benefit) as well as demonstrating its wider social contributions (a public benefit); in the shorter-run, a university might have interest in maximising its third-stream income as well as wanting to create a positive image of itself in the mind of local residents.

A final issue arises where there is a divergence of the interests held by partners, for example when some partners have long-term, public interests whilst others have more immediate and opportunistic interests, as well as where interests are not suitable for the desired outcomes. Massey et al. (1992) highlight how where short-term interests dominate science parks, supposedly long-term projects, then there is no real knowledge exchange, and they default to simple real estate projects. Although this may meet the universities' interests, it has little to do with knowledge exchange and the benefits which this brings to universities. Therefore, the alignment of the kind of interests with the desired knowledge exchange appears to be an important determinant in understanding whether the activities proposed will lead to the desired knowledge exchange.

CONCLUSION: CLARITY IN KNOWLEDGE EXCHANGE PROCESSES

Knowledge exchange involving universities is a very complex phenomenon, deriving from a number of distinct factors:

- Knowledge exchange is widespread across what universities do, but is not necessarily the most urgent concern for universities.
- The university sector has evolved in the last thirty years to become a central pillar of contemporary education policy, and as a result experiences growing pressure to increase societal contributions.
- There has been a change in the importance of knowledge in society and a shift in the way knowledge has produced which has influenced expectations upon universities.
- Much pressure on universities to be more engaged and undertake more knowledge exchange is coming from quarters which do not necessarily have a realistic understanding of university knowledge exchange. There has been a focus on research on individual transactions such as consultancy, spin-offs or student placements. But the rationale for such activity is at best a small part of the university interest, making it hard to understand why universities might exchange knowledge, and of what they ought to be mindful in its pursuit. Additionally, there has been a tendency to regard knowledge exchange as a separate task or mission for the university and this often leads to this 'third mission' being peripheral within institutions. Viewed from the perspective of university strategic management knowledge exchange therefore often becomes invisible or overlooked. In better understanding the strategic importance of knowledge exchange to universities, there are a variety of starting points from which to structure its consideration.
- The different levels at which knowledge exchange is embedded within a university, from the high-level, abstract and general, to the micro-scale of the regular activities and challenges of the university community, and the different interests universities have in knowledge exchange, from the intrinsic, through the extrinsic, to the narrative.
- The different interests of the parties involved in particular knowledge exchange activities, and the relationship to the kinds of knowledge exchange activities, and the kinds of dependencies which the university can address through knowledge exchange, leveraging its own resources, legitimacy and knowledge to secure its institutional survival.
- The congruence of the interests of those involved in particular knowledge exchange activities, and the relevance of those activities for the type of knowledge exchange: the example was taken of urban science, involving long-term strategic interests, therefore requiring a strategic coupling of partners to high-level ideas as well as to the more immediate realisation of private profits.

It is clear that part of the problem in knowledge exchange arises from unrealistic expectations and understandings of what universities contribute to society. Universities existing contributions are often not acknowledged, which can lead to a disagreement between policy-makers urging universities to do more, with universities pointing to their manifold links into society and wider benefits. What is overlooked here is the scope that exists for the strategic management of this activity to improve its overall performance, getting beyond demands to create something completely new set against resisting institutional change.

It is evident that this is a political problem, arising from the way that a series of discussions have unfolded about the emergence of the knowledge society, and therefore a political solution is also necessary if there is to be a more realistic appraisal of improving universities' knowledge exchange performance. There is a need for a shift in rhetoric from all partners involved, to governments accepting universities already contribute greatly, universities acknowledging they can do more, and society at large articulating its value for those contributions. Once the current atmosphere has calmed, then there is a chance to look more rationally and synoptically at universities' societal involvement in terms of both their contribution to university core needs and those of societal partners, and help secure universities institutional future as independent institutions working with societal partners towards building inclusive, competitive and sustainable future knowledge economies.

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13. UNIVERSITY ENGAGEMENT AND REGIONAL INNOVATION

INTRODUCTION

These days there is increasing pressure being placed upon higher education institutions (HEIs) to meet societal needs. HEIs have been working for society for a long time. HEIs make their facilities available, identify community problems, research societal issues, work on commissions from community groups and deliver services (such as health or education) in those communities. Next to their roles in providing education and research, HEIs are already making non-traditional societal and economic contributions.

In meeting major societal challenges, which have both a global and local dimension, universities and other higher education institutions have a key role to play in knowledge creation and its translation into innovative products and public and private services. This is a process that can engage the creative arts and social sciences as well as scientists and technologists. This role for HEIs has been highlighted in the agenda adopted by the European Commission in September 2011 for the modernisation of Europe's higher education systems (EC, 2011).

Below we reflect on the role that universities and other HEIs play in their regions – how they contribute to regional innovation and, more generally, how they engage with their communities. All of this is based on the MODERN thematic report on University engagement and regional innovation (Benneworth, 2010).

THE CHANGING SOCIETAL COMPACT

A new kind of third mission for universities has emerged, that of the regional role (OECD, 2007). The reason for this recent emergence lies in increasing pressure on policy-makers to improve economic performance and growth rates. Universities are expected to become involved in regional innovation processes. But HEIs are not welfare organisations, raising the question of how far this 'third mission' should shape a HEI's priorities. HEIs must rethink both their traditional tasks of teaching and research, but also potential other tasks. This is a delicate balancing act that will require HEIs to be selective and make strategic choices. The key question for a HEI is how to create synergies between teaching, research and regional innovation, and to use the synergies to become more engaged with its communities to bring new resources and knowledge into the HEI and to strengthen its role as a key knowledge institution.

The idea of a regional mission for higher education is now widely accepted as part of the 'third mission' alongside the key university businesses of teaching and research. For a long time HEIs have been universal, global institutions, located in and contributing to their region and communities. Such regional - local contributions help explain why the institution of the university has thrived over the last centuries. Many universities were created to have specific societal impacts and indeed to benefit their regions (OECD, 2007), not necessarily to 'boost' their host region, but a mission to have a particular impact on that region. The land grant universities in the US and the city universities established in Britain are examples. In both Australia and Norway, waves of HEIs have been created specifically to ensure comprehensive higher education provision across the remoter parts of their respective national territories (Rutten et al., 2003).

Being regionally relevant does not need to come at the expense of being an internationally recognised research institution. This point is illustrated by examples such as the universities of Leiden (in the Netherlands), Leuven (in Belgium) and Lund (Sweden) that are highly ranked in research rankings while playing a crucial role in their region's economy. Research into the regional impacts of universities has pointed to three kinds of contributions made by universities to their host regions: direct economic impacts, indirect service provision, and upgrading the quality of local economies and political systems. It is from this third impact that the interest in the role of universities in regional development (or: innovation) processes has arisen.

Universities have direct economic impacts in terms of the direct purchasing of supplies by the university, the jobs emerging from the staff and student expenditure in the region, and the additional economic activity induced by that additional expenditure in the regional supply chain. The wider regional development impacts relate to the provision of health services, sporting and cultural services, technology transfer, volunteering, school outreach work and continuing education. Today, the universities' transformational impact on their regional economies is receiving a lot of attention from politicians, policy-makers and university administrators. Universities could help create higher value added sectors and upgrade those existing sectors to be higher value-added. They can - and are increasingly expected to - upgrade regions, including in terms of the quality of governance and decision-making. Evidence on their activities in these areas has already for some time been collected in countries like the UK, where the Higher Education Business and Community Impact Survey (HEBCIS) provides detailed breakdowns of universities' regional impacts (Charles & Benneworth, 2001). Obvious examples of linkages between universities and regional businesses covered in surveys like these are the placement of students in local business.

An important question is to what extent the regional dimension is seen as a second tier of activity, either as second class rather than world-class, or as an added extra undertaken out of a sense of corporate responsibility rather than enthusiasm or interest (Brink, 2007). With universities facing pressures from increasing numbers of external partners or stakeholders, they must make conscious, strategic decisions over which pressures and demands they will react to (Jongbloed et al., 2007). Perhaps more important to ask is under what conditions regional partners can become universities' key stakeholders. Firstly, regions are already important stakeholders for some kinds of HEIs, notably teaching-led institutions such as Fachhochschulen and Universities of Applied Science. Secondly, some kinds of regions stimulate their universities, posing interesting questions and creating a productive symbiotic relationship, such as in Silicon Valley or Route 128 in America (Saxenian, 1994). Thirdly, in some cases universities and regions (regional partners) have a long history of working together. Finally, there can be situations where universities are legally mandated or encouraged to work with their regional partners.

To understand these questions, it is necessary to look more closely at how territories develop economically in the contemporary context of the knowledge society. That leads to the concept of regional innovation models, which may provide a basis for understanding from where mutual benefits can emerge in university-regional engagement.

REGIONAL INNOVATION SYSTEMS

Innovation - the development of new products, processes and techniques - has increasingly come to be recognised as an interactive process, undertaken between networks of actors. Where there is repeated and regular interaction, then these networks of innovators help to stimulate new kinds of innovations. Universities are part of the larger 'ecology' of knowledge-using and knowledge-creating organizations that interact in creating value. The regional scale - the scale of regular daily interaction - is important as a scale at which innovators can regularly personally interact and exchange tacit knowledge. This is the idea of regional innovation systems (Lundvall, 1988). These networks are built on user-producer interaction founded upon building-up trust. This in turn may give both parties a sense of the value of the knowledge exchange, sometimes by involving the production of new knowledge.

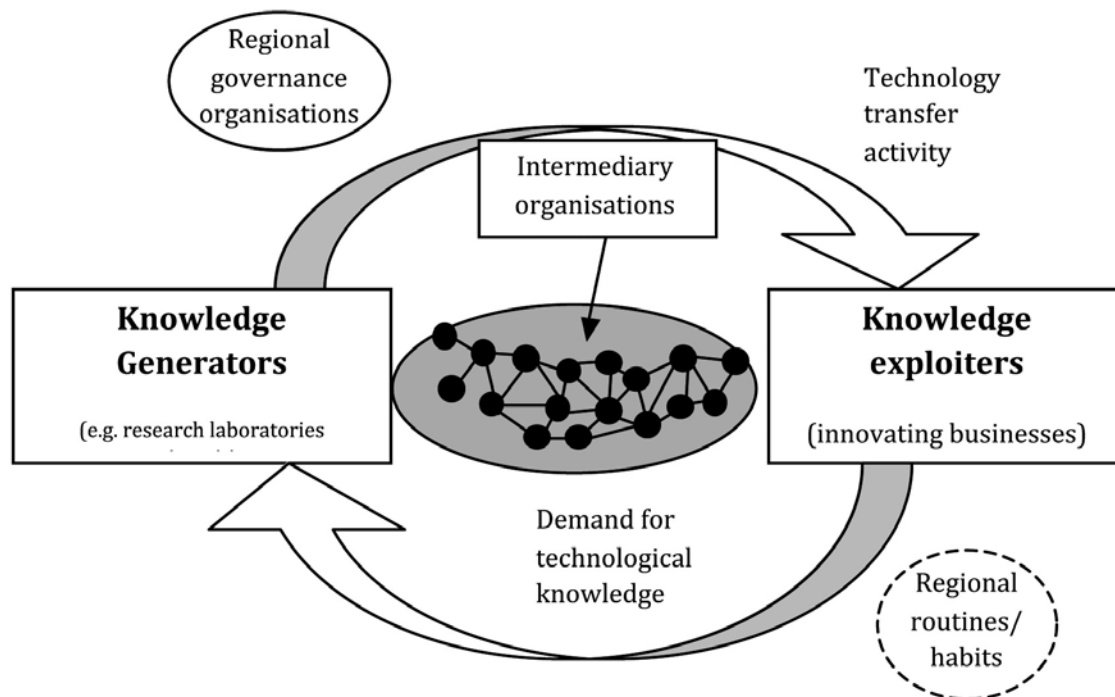
On the one hand Universities contribute to regional innovation environments to fulfil their societal obligations. Universities help to provide a gateway to the wider world for their regions thus creating new assets for regional innovation. Stronger regions can be places where universities can better co-operate with a wide array of partners to strengthen their own knowledge bases and improve their core businesses of teaching and research. At the same time, by participating in regional innovation, universities make themselves eligible for new kinds of investment that can strengthen their core activities. Good innovation environments are successful because they have 'pools' of tacit knowledge that can be tapped into. Regional innovation systems (RISs) consist of:

- **Knowledge producers:** organisations producing new forms of knowledge later applied to solve particular problems encountered in innovation activities.
- **Knowledge consumers:** organisations exploiting knowledge created elsewhere by creating new products,

processes and techniques that generate sales and improve competitiveness.

- **Intermediary organisations:** organisations encouraging co-operation between knowledge producers and consumers, by acting as an honest broker or providing subsidies to overcome information asymmetries.
- **Regional governance organisations:** organisations setting or influencing the ‘rules of the game’ of an RIS: RISs are rarely sufficiently autonomous to set their own rules of the game, but they can produce local variants (‘styles of innovation system’, cf. Lundvall, 1998).
- **Regional routines and habits** - the ‘informal institutions’ specific to regions, which facilitate systemic interaction.

Figure 3 A conceptual model of a regional innovation system



Source: Coenen (2006)

Policy prescription based on the idea of a regional innovation system involves mapping regional knowledge producers' capacities, regional knowledge exploiters needs, identifying the gaps between the two, and then filling those gaps by a mix of education and new institutions, funded by regional policy funds.

However, focusing exclusively on things happening within a territory runs the risk of ignoring external factors determining or shaping regional activities. By failing to look beyond the region, regional innovation studies may miss an important element of the picture of what ‘matters’. The three key actors in an RIS are all embedded in their own networks: firms are embedded in corporate and sectoral innovation systems, universities are embedded in global networks of prestige and reputation, and governance actors are embedded in multi-level governance systems. For instance, research quality in universities is judged within international networks, through publication records within international, often English-language, journals and prestigious scientific awards. Universities' reputation and prestige - which help attract external resources - are driven by factors originating outside the region (Boucher et al., 2003). To boost their RIS, regional actors may be called upon to ensure that local actors can get access to resources brought into the region, by anchoring those resources in other regional activities, creating genuine spill-over effects from global players otherwise quite closed and isolated from regional activities. The concept of an RIS offers a good model for the universities' roles in regional innovation systems, as global-local connectors, serving as “global pipelines creating local buzz” (Barthelt et al., 2004).

UNIVERSITIES AS GLOBAL PIPELINES DRIVING LOCAL ECONOMIES

Regional innovation provides a means for universities to engage with their local environments and at the same time work together on activities which benefit both the regional partners whilst strengthening the universities' own core activities. This is made more complicated because of the fact that universities, as well as other partners within RISs, are also involved in their own wider extra-regional networks. At the same time, a second dimension of complexity comes through the fact that universities can have both generative impacts as well as improve the quality of those innovation systems. Therefore, understanding how universities operate within RISs requires understanding each of those dimensions in turn.

The key question is how the assets of the region (that includes the university) can be collectively and creatively combined in ways that meet the needs of the university as well as other regional actors. Both universities and regional actors are seeking synergies between their various activities: universities regularly use for example their students (teaching) to undertake research (through dissertations) and community service (student placements). An example is the link between culture and skills, where it is increasingly common for public funding for the arts being contingent upon those arts institutions working with schools and communities to contribute to the raising of local and regional skill levels.

Thus, in many ways the university's assets can support regional development activities, and vice versa. However, how to manage these activities – from the side of the university and from the side of regional actors (e.g. public bodies, regional development agencies, community groups, private business, etc.) then becomes an important strategic issue. Universities and regions will have to work together to build up a capacity to collectively plan activities, based on an appropriate interface (or platform) (OECD, 2007). Strategic co-ordination and reciprocity between university and region is essential, but often not easy to realise, for one thing because of the wider contexts in which each partner is operating. The vitality of the regional connectivity is also very much dependent on inter-regional and international relationships that go beyond the immediate region and that complement the “local buzz”. Once again, universities can act as one important global-local connector. Barthelt et al. (2004) used the phrase ‘global pipelines, local buzz’ to describe this situation: universities are bringing people, resources and ideas together from outside the region to create a set of potential opportunities for a region. These resources can in turn cross-fertilise with local activities to create a sense of ‘local buzz’, so a region becomes the ‘place to be’ for solving particular technological or scientific problems (Gertler, 1995). The challenge for the ‘university-regional dynamic interface’ is in ensuring that as many of the assets to which universities have contacts with through their various networks are attracted to the region and embedded in local activities.

In building their coalitions and configuration, an important stakeholder group which is arguably the most important of all for universities is the government – science and education ministries, economic affairs authorities, other national ministries, and international funding agencies and organisations like the EC that provide important structural (and cohesion) funds for research and development. Again, the identification of stakeholders and – based on that – building up relationships with key stakeholders is the issue here. The less dependent external (in the sense of: external to the region) stakeholders are upon a region, the less interest they have in working with the university to achieve that outcome. There must be a strong common cause that ‘strategically couples’ these actors’ interest to the region through particular projects that these external actors need in order to achieve their institutional goals.

How universities go about in configuring their role in regional innovation depends on the kinds of impacts and benefits being considered. For instance, they may make campus space or research facilities available for new high-technology businesses, and bring university and business closer together to increase the universities’ regional business. But, what is more important, they will have to ask the question: is it possible to use these activities to genuinely strengthen the core businesses of the university? Private R&D investors and companies may come to the region because of the presence of the university that can act both as a research partner and as a provider of highly skilled graduates for the workforce. It is up to the university to make sure that its research is not becoming over-specialised or applied on areas of interest to current businesses. However, engagement does not necessarily undermine research excellence as is shown in the case of universities operating science parks – such as Lund, Leuven and Twente.

The regional engagement agenda does not have to be limited to technology transfer from the hard and life sciences only. There are many other ways in which universities can get involved in flagship development projects in their region. There are a range of examples from the field of arts and culture where universities have engaged with city development strategies to create new cultural campuses with synergies between arts activities and infrastructure, and the universities' own activities in these areas. There has been a growing dissatisfaction with the restricted nature of the idea of technology transfer; and therefore the term knowledge transfer is now preferred.

PRINCIPLES FOR EFFECTIVE REGIONAL INNOVATION

Regional innovation is one way in which universities can demonstrate their fulfilment of the societal compact. But to understand how regional engagement and innovation can contribute to modernising Europe's universities the following issues and challenges emerge:

1. How to balance regional innovation with the universities' core missions, particularly when there are such strong pressures for universities to focus on a particular mission ('profiling'). Is regional engagement a task for a sub-set of HEIs or potentially appropriate for all HEIs?
2. There is a strategic management challenge for universities in the sense of optimising the 'base load' of regional innovation activity on the one hand and, on the other, thinking strategically about the opportunities which the regions offer for on-going institutional development.
3. How to capitalise on existing activities and partners and to improve based on what is already done with regional partners?

In terms of the first challenge, the framing of regional engagement and innovation as part of the third mission is not very helpful. The notion of a 'third mission' suggests something peripheral to universities' core activities, hinting at an industrial liaison office or an engagement and placements centre. However, effective regional innovation involves exploiting emerging opportunities for societal engagement and networking to improve the salience, relevance and quality of the core tasks undertaken by universities. What this review makes clear is that there are no practical or conceptual reasons why excellent research cannot also be societally useful.

In terms of the second challenge, the strategic management of regional innovation activities by universities, there are two types of activities to assess. First, the engagement activities already underway within universities. Here the issue is how to optimise these activities to maximise the benefits they bring to the university commensurate with the efforts and risks involved. Second, undertaking new, flagship, developmental regional innovation activities. These will bring the management challenge of attempting to change the way that things are done and to handle the relationships between regional actors. The latter type of activity implies a great deal more risk and uncertainty. The complex dynamics of the relationships require careful management and risk sharing if both universities and regions are to obtain the greatest benefit from their collaborations.

The final challenge relates to universities managing their regional engagement activities to maximise the benefits and opportunities, and minimise costs and risk. This involves writing a strategy, publishing policies and guidelines (covering things like intellectual property, building hire, staff and student volunteering, and participation in public life), allocating resources to encourage, stimulate and reward engagement, establishing performance indicators and targets, then monitoring progress towards the strategic goals. This will need to be discussed with the internal and regional stakeholders of the university to ensure that the potential benefits of regional engagement are legitimate.

Once these challenges have been addressed and digested, European HEIs will be better equipped to reinvent themselves as institutions central to securing long-term economic prosperity, social cohesion and environmental sustainability for Europe as a whole.

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