Research & Occasional Paper Series: CSHE.7.09

CSHE | Center for Studies in Higher Education

UNIVERSITY OF CALIFORNIA, BERKELEY
http://cshe.berkeley.edu/

EUROPEAN RESPONSES TO GLOBAL COMPETITIVENESS IN HIGHER EDUCATION*

May 2009

Marijk van der Wende
VU University Amsterdam & CHEPS, University of Twente

ABSTRACT

The growing global competition in which knowledge is a prime factor for economic growth is increasingly shaping policies and setting the agenda for the future of European higher education. With its aim to become the world's leading knowledge economy, the European Union is concerned about its performance in the knowledge sector, in particular in the nexus of research, higher education institutions, and innovation. A major concern is to solve the "European paradox": whereby Europe has the necessary knowledge and research, but fails to transfer this into innovation and enhanced productivity and economic growth. Further complicating the matter, policy responses are formulated and implemented at different levels within the EU: at the European-wide level, the national, regional, and institutional levels. Moreover, the formulation of policies are often underpinned by different perceptions of the meaning of globalization, the nature of global competition for the higher education sector, and by differences in the current ability of institutions to effectively promote innovation in the private sector. This paper offers an overview of relevant European higher education policies and responses to global competition, and considers how global competitiveness can best be stimulated and achieved; what role competition and cooperation-based strategies at the national and European level play in this respect, and what is the best mix.

Responses to globalization and more precisely, the growing global competition in which knowledge is a prime factor for economic growth, are increasingly shaping policies and setting the agenda for the future of European higher education. With its aim to become the world's leading knowledge economy, the European Union is concerned about its performance in the knowledge sector, in particular in research, (higher) education and innovation (the so-called "knowledge triangle"), and aims to solve the "European paradox": whereby Europe has the necessary knowledge and research, but fails to transfer this into innovation and enhanced productivity and economic growth.

* This paper is adapted from a chapter in the forthcoming book *Globalization's Muse: Universities and Higher Education Systems in a Changing World*, eds. John Aubrey Douglass, C. Judson King, and Irwin Feller (Berkeley: Public Policy Press, forthcoming summer 2009).

Indicators to “tell the story” refer to investments in higher education and research that lag behind those in the USA and Japan, as is the case with the level of higher education qualifications among the EU working-age population, and the number of researchers in the labor force. The share of European Nobel Prize winners has declined throughout the 20th century, brain drain continues, too few European universities appear at the top of global rankings, the universities hold few registered patents, the US attracts more R&D expenditure from EU companies than US companies allocate to the EU, and China may soon be spending the same percentage of GDP on R&D as the EU — all of these facts are fueling further concern.

OECD’s Secretary General commented recently: “Universities in Europe are not living up to their potential. Funding is too low, and the rewards for excellence are not there yet. Links to the business world are also weak. Europe has no shortage of brilliant minds, but they are locked away in low-performing institutions” (Gurria, 2007).

Awareness of these concerns is not limited to governmental levels, but is also present in the higher education sector: "It is evident that the European university system needs to broaden access on a more equitable basis, that it has to reach out to increased excellence and that it must allow for more diversification within the system. The American university system is, as the former President of the American Council of Education, David Ward, put it, ‘elitist at the top, and democratic at the base; the European university system seems to be neither […]. Alarming for Europe is not only that China regards the US and Japan, and not Europe, as its potential peers to be matched in research and higher education. As announced officially, China aims at matching the US and Japan with respect to innovations by 2020. Given Europe's stagnation and the dynamics in East Asia, one can easily predict the day when East Asia — and not Europe — will possess ‘the world’s leading knowledge-based economy’" (EUA President, 2006).

Policy responses to the pressures of growing global competitiveness cannot easily be captured as one single trend or strategy, as they are formulated and implemented at different levels: European, national, and institutional, with the regional level additionally sometimes cutting across the European/national distinction. Moreover, they are underpinned by sometimes quite different perceptions of globalization and the meaning of global competition for the sector and by major differences in their actual abilities (i.e., financial and human resources) to support action.

Consequently, European responses may seem to be somewhat preoccupied or confused. Clearly, it takes more political conviction than demonstrated so far to hold to the intended 3% GDP target for R&D expenditure and to accept the 2% GDP target for higher education expenditure, mainly through stimulating more private investments in these areas. Conceptual and practical issues are related to the need for convergence (system coherence and transparency) and more diversity (in order to allow for more access and excellence) at the same time. Other major questions in designing further policies focus on how global competitiveness can best be stimulated and achieved; what role do competition and cooperation-based strategies at the national and European level play in this respect, and what is the best mix?

1. EU Higher Education Policies

For the European Union as a whole, with the European Commission (EC) being a major policy actor, we can distinguish different phases and approaches (Huisman & Van der Wende, 2004; 2005). Yet the way in which individual countries respond to these policy initiatives can be quite diverse.

Brief historical overview: the ERASMUS era

After the EC of the then-countries of the European Economic Community became active in higher education in the mid-1970s, its initiatives were for a long period restricted to stimulating cooperation and mobility between "closed" national systems in which the controlling power entirely lay with the member states (based on the "subsidiarity principle"). Such initiatives were successfully extended across levels and countries until the end of the 1990s. Beginning with an initiative to stimulate action at the level of individual academics and students, the first ERASMUS program (1987) gradually developed through the SOCRATES program (1996) into an effort in which the curriculum and the institutional (policy) level were included. With the enlargement of the EU, especially after 1992 with preparations for the joining of ten new central and eastern European member states, the activities underwent a substantial geographic expansion. The rationales for these activities were seen as mainly academic and cultural, for example scholarly exchange, mutual learning processes, and the role of foreign languages. The agenda was strongly focused on the European integration process, and consequently on intra-European cooperation. Yet it is also undeniable that the process of European integration, cemented by the completion of the European internal market in 1992, was driven by an important economic agenda. Mindful of this, in 1991 the EC launched a Memorandum on Higher Education underlining the role of higher education in the economic and social cohesion of the EU. The response of the higher education community was particularly negative and critical of this use of an economic rationale for higher education.[1] It was ten years before the EC was able to come back with another message on the role of higher education in economic growth and competitiveness.

Two major vehicles: the Bologna Process and the Lisbon Strategy

In the late 1990s in European higher education, awareness of global competition was raised. It was realised that despite all the success that had been achieved in enhancing intra-European mobility[2], the picture in relation to extra-European mobility was a less successful one. Europe had lost its position as the number one destination for foreign students to the United States, was losing too many of its own graduates and researchers to R&D positions in the United States, and had substantially less efficient degree structures than the United States because its graduates entered the labor market at an older age than did American graduates. Awareness of these factors led to initiatives at various levels. First, in 1998 the ministers of four countries (the United Kingdom, Germany, France, and Italy), called for the harmonization of degree structures. This was

[1].On a larger international scale (including notably developing countries) and later in time, the same type of response emerged from the 1998 UNESCO World Conference on Higher Education, which also strongly rejected the competitive, market-driven model and stressed that appropriate [national] planning must be based on cooperation and coordination between institutions of higher education and responsible state authorities.

[2] In 2007, the ERASMUS Programme will celebrate its 20 years, with over 1.5 million students exchanged (now 150.00 per year) and in the hope that in 2012 3M will be reached.

the initiative that triggered the 'Bologna Process', launched in the signing of the Bologna Declaration by 29 countries one year later. This was an important bottom-up initiative — the EC joined the process only later — toward system convergence with a view to enhancing employability in Europe and the international competitiveness and attractiveness of European higher education as a whole.

The EC itself was able to become more active after 2000, which was the year that the heads of state and government declared in Lisbon that the EU should become by 2010 the most competitive and dynamic knowledge economy in the world. Shortly after that, education was defined as one of the key areas in achieving this goal. This provided the EC with an important political mandate in the area of education policy (though this mandate was not supported by any extended legal power). The EC quickly developed a wide range of initiatives under what became the 'Lisbon Strategy'.

The Bologna Process and the Lisbon Strategy are the main vehicles or frameworks guiding the European response to globalization in higher education. Although they emerged in very different ways (bottom-up versus top-down), and thus have some different patterns and origins of ownership, and could be characterized as intergovernmental (Bologna) versus supra-national (Lisbon), they seem to converge slowly into one overarching approach.

After the first phase of the Bologna process, which focused strongly on the intra-European convergence and transparency agenda (i.e., reform of curriculum and degree structures for easier recognition with a view to employability in the European labor market), in the second phase, the process has become more oriented to the "external dimension", with the aim of enhancing international competitiveness and attractiveness, and to its connections to other regions. This coincided and was paralleled by the creation of the ERASMUS MUNDUS program (in 2004) and the development of the European Higher Education Area (EHEA) and the European Research Area (ERA), as part of the wider of the Lisbon Strategy which aimed to make "Europe the most competitive and dynamic knowledge economy in the world by 2010."

Lisbon clearly represents the wider agenda: "The Education and Training 2010 work programme, recognising the extreme importance of modernisation of higher education, *over and above* the reforms called for in the Bologna process which*, a fortiori*, are also important for achieving the Lisbon objectives" (EC, 2005, p. 11). Also in a more technical sense the key instruments from the Bologna process have been integrated into the Lisbon Strategy (see 2.5).

Although convergence between the two agendas and processes can be observed, this is seen by many as a paradigm shift. The Bologna process is associated with mutual cooperation and an in principle the equal position of all institutions and systems, whereas the Lisbon agenda is seen as more explicitly competition-driven and intended to produce more hierarchical and stratified impressions of the European higher education landscape (see 2.5).

Both processes and their outcomes so far will be discussed in more detail below.

The Bologna Process: patterns of convergence.

The Bologna Process represents the totality of commitments freely taken by each signatory country (45 nations since 2005)[3] to reform its own higher education system in order to create overall convergence at the European level, as a way to enhance international/global competitiveness. Its non-binding character was a crucial facilitator, given the need to overcome reluctance in Europe toward standardization and harmonization. Its bottom-up character should be understood in terms of the limited competencies of the EC in the field of higher education policy.

The achievements of the Bologna Process have been substantial and influential. The range of policy issues included in the Bologna Process was extended throughout the medium of ministerial meetings that took place every two years to follow up on the implementation of the process. The initial focus on a change of degree structures into a two-cycle (undergraduate-graduate) system, and the wider implementation of ECTS (European Credit Transfer System) with the aim of enhancing the readability and recognition of degrees, extended into the development of a European Qualifications Framework, the description and 'tuning' of competences and learning outcomes at the curriculum level, and substantial initiatives in the areas of quality assurance and accreditation (see also Reinalda & Kulsza, 2005).

Since the 2005 ministerial meeting in Bergen the work program has been extended to the "third cycle," i.e., the reform of studies at the doctoral/Ph.D. level. Reforms would focus on the length and structure of these programs, interdisciplinarity, supervision, the training of generic skills, systematic assessments, etc.

A series of biennial studies has demonstrated that the implementation of the two-cycle degree structure was established in almost all countries by 2005, although in various modes and at a varying speed of introduction (Reichert & Tauch, 2005). In-depth studies and comparisons between countries show that the actual implementation of the new structures can vary significantly. Lub et al (2003) found substantial differences between the Netherlands, where the new two-cycle system replaced the existing long first-cycle degree system; and Germany, where the new system was implemented parallel to the existing system, and despite quick growth in the number of new degree programs, only a small fraction of the total student population actually participates in these programs.[4] Alesi et al. (2005) found in a comparison among six countries that there is no unified logic within the system of new degree programs. This point applies both to the breadth of the introduction – in each country different groups of subjects are excluded from the new structure, and different time frames set for the introduction – and to the duration of the new programs.

The 3+2 year model, a bachelor's degree followed by a master's degree, is the basic model; but there are many variations from this model. For example, the United Kingdom is a notable exception: In that nation master's degrees mostly take one year. Likewise Witte (2006), in a comparison of England, France, the Netherlands, and Germany, found that there is variation in the degree of change following from the Bologna process,

[3].Membership of the EU is not required for joining the process, which explains the fact that the number of Bologna signatory countries exceeds the number of EU member countries (25).

[4].In 2001, 10%of the total number of study programs were structured in bachelor-master, with 1 per cent of the student population enrolled in them. In 2003, this had increased to 23% of programs, catering to 3.5 per cent of the student population.

especially if one looks at implementation. She concludes that the four countries under study weakly converged between 1998 and 2004, in the direction of the English system.

Witte also concluded that although the changes leading to that convergence all occurred within the framework of the Bologna Process, this does not necessarily mean that they have been caused by it. Rather, the Bologna Process has often served to enable, sustain, and amplify developments that have been driven by deeper underlying forces or particular interests at the national level; for example the pressures to reduce study length, the time within which a student must complete a degree or drop out. Sometimes the Bologna Process has simply provided a mental frame for developments that were unrelated to degree structures as such. This illustrates that actors align themselves with the international context and international perceptions only when those perceptions are consistent with nationally grounded preferences. At the same time, international perceptions have a very high legitimating power when they support national preferences, even though those international perceptions may be selective and biased, sometimes even wrong, and are rarely questioned (492).

Diversification trends and policies

Apart from the fact that the Bologna Process is implemented quite differently *across* countries, weakening its harmonizing or convergence effects, parallel to it, divergent trends can be observed. This is especially the case *within* countries. Examples are Germany and France, where there is increased diversity in each case. This is partly due to the parallel existence of different degree structures in the transition phase, but also derives from the increased curricular autonomy of HEIs (Witte, 2006). In a number of countries, among the trends in governmental policies are increased autonomy and a push for more diversity in the system. This is especially the case in those national systems which aim to enhance participation in higher education; for example the United Kingdom, Sweden, Finland, and the Netherlands, where participation targets of 50% have been formulated. More diversity is seen as a necessary condition to achieving these aims. The EC also advocates increased diversity, as a condition for excellence and greater access (EC, 2005).

At the same time, another process of convergence can be observed. As both academic and professionally oriented higher education institutions offer bachelor's and master's programs, there are frequent and increasing instances of functional overlap. This convergence of the two main types of higher education may lead to a change in those nations with such binary systems. But again, in response to this situation, nations exhibit diversity, and an overall trend toward a unitary system cannot be confirmed. In Hungary it has been decided to abolish the binary system and to replace it with a more varied range of programs, especially at the master's level. The Netherlands intends to maintain the binary system and wants more institutional types to emerge. In Finland and Austria, binary systems were established only over the last decade. The United Kingdom, which abolished its binary system in the early 1990s, is now looking to re-establish more diversity with the abovementioned aim of thereby enhancing participation. These trends raise questions about the level at which diversity is defined and pursued, and whether it is systemic, institutional, or programmatic diversity (Birnbaum, 1983). A more contemporary point is that "there has been a gradual shift in the meaning of 'diversity' – from diversity among national systems of higher education to a European-wide diversification in institutions and programmes with different profiles" (Hackl in Olson 2005).

An important distinction needs to be made between changes at the undergraduate and the graduate levels. Increasing participation rates require diversity to be enhanced especially at the undergraduate level, thereby enabling nontraditional students to enroll. In terms of programmatic diversity, the introduction of the associate or foundation degree, awarded after two years higher education, is important here, but often this is seen to contradict the spirit of the Bologna Declaration[5]. At the graduate level, where the patterns of activity are closely related to research strengths, there is a trend toward greater concentration and specialization.

These various trends indicate that the current dynamics in European higher education are at one and the same time characterized by trends of convergence, aiming for harmonization and transparency; and divergence, searching for more diversity. Both kinds of trend are considered important in order to enhance competitiveness in the global context. Increased participation rates among a larger number of domestic students, fostered by diversity of provision, are seen to enhance the potential of each country as a knowledge economy. Enhanced cross-border mobility within Europe, and attracting more students from other regions, objectives fostered by harmonization and convergence, are seen to enhance the performance of the European knowledge economy as a whole.

At the same time, this implies patterns that to an extent are confusing, and it raises questions about the further direction of the process of Europeanization in higher education. Given that multi-level actions and interactions are involved, these questions are not easy to answer, and future directions are not easy to predict. But clearly, differentiation is thought to be at least as important as convergence: "European universities have for long modelled themselves along the lines of some major models, particularly the ideal model of the university envisaged nearly two centuries ago by Alexander von Humboldt, in his reform of the German university, which sets research at the heart of the university and indeed makes it the basis of teaching. Today the trend is away from these models and towards greater differentiation" (EC 2003, 5-6).

The Lisbon Strategy: Coordinating policies for a European knowledge economy

As noted, whereas the Bologna Process emerged bottom-up and the role of the EC in the process was initially limited but over time gradually developed into a leading one, the initiative for the Lisbon strategy was taken by the EC at the supra-national level, and in its implementation it exhibits a more top-down character. Yet this strategy cannot be characterized completely as top-down, since the formal competences of the EC in the area of education policy have not been enlarged. Instruments used are thus not (legally binding) EU directives, but take the form of recommendations, communications, consultations, or other working documents. This 'open method of coordination,' based on common objectives, is translated into national action plans and implemented through sets of indicators, consultative follow-up, and "soft" mechanisms such peer review, peer learning, and peer pressure (see also Gornitzka, 2005).

In 2001, the EC published a first report setting out the steps to be taken in response to the challenges of global competition in higher education (EC, 2001). The report explicitly referred to market-oriented approaches to internationalization in the United Kingdom,

[5].Because the Bologna Declaration required minimum three years for the first degree. This has been solved by considering this type of 'short cycle higher education' as integrated into or linked to the first degree (MSTI 2005).

Germany, France, and the Netherlands and stressed the need to attract more students from other regions to the European Union. This laid the foundation for the establishment of the ERASMUS MUNDUS program in 2004. This program includes a global scholarship scheme for third-country nationals, linked to the creation of "European Union Masters Courses," based on inter-university cooperation networks. The program has enrolled more than 800 students and 130 scholars, about 40% from Asia, in 60 master's programs in the academic year 2005-2006,[6] and is expected to grow further. These figures can be compared to the 1,300 foreigners who enter the US every year as fellows of the Fulbright program, on which ERASMUS MUNDUS was largely modelled.

Following up the Lisbon summit of 2000, in 2002 the EC published a detailed work program on the future objectives of education and training systems in the EU (EC, 2002), emphasizing the central role of those systems in achieving the aim of Europe becoming the world's most competitive and dynamic knowledge society by 2010. The general goals of improving quality, enhancing access, and opening up the education and training systems to the wider world were worked through in a set of more specific objectives for the various education sectors. Those most relevant to higher education were the objective of increasing graduates in mathematics, science, and technology by 15% while improving gender balance, to ensure that more than 85% of all 22-year-olds had achieved at least an upper-secondary education level, and to ensure that 12.5% of the 25-to-64-year-old adult working population participated in lifelong learning.

In 2003, the EC launched a large-scale consultation on the role of higher education institutions in the European knowledge economy (EC, 2003a). It showed a particular concern for the funding of higher education. The increasing underfunding of European higher education institutions was seen to be jeopardizing their capacity to attract and keep the best talent and to strengthen the excellence of their research and teaching activities. The consultation round took two years, and was paralleled by a series of critical messages on growth and innovation. Two important reports published in 2003 (EC, 2003b, 2003c) revealed that the objective of boosting EU spending on R&D from 1.9% to 3% of GDP — the principal target for research expressed in the Lisbon strategy — was far from being met; that the R&D investment gap between the European Union and the United States increasingly favored the United States;[7] and that brain drain out of Europe and notably to the US was still on the rise. It was clear that the EU was hindered in catching up with its main global competitors by a lack of investment in human resources[8] by not producing enough higher education graduates,[9] and by attracting less talent than its competitors.[10] Furthermore, the EU had too few women in scientific and

---

6.See: http://europa.eu.int/comm/education/programmes/mundus/index_en.html

7.80% of this comes from the difference in domestic business R&D expenditure between the EU and the US. Further analysis showed that the US attracts one-third more R&D expenditure from EU companies than US companies allocate to the EU (a net outflow of EUR 5 billion in 2000) (EC 2003b).

8.Especially private investments in education in the EU (0.6 per cent of GDP) lag behind the US (2.2 per cent) and Japan (1.2 per cent). The biggest difference is in higher education: the US spends between two and five times more per student than EU countries (EC 2004).

9.On average in the EU, 21% of the EU working-age population holds a higher education qualification, compared to 38% in the US, 43% in Canada, 36% in Japan, and 26% in South Korea. (EC 2005).

10.The EU produces more higher education graduates and doctors in science and technology (25.7%) than the US (17.2%) and Japan (21.9%) but the percentage of them at work as researchers is much lower in the EU (5.4 per 1000 population in 1999), than in the US (8.7) and

technological fields; rates of early school leaving were still too high and rates of completion of upper secondary education still too low, with nearly 20% of young people failing to acquire key competences; there were too few adults participating in lifelong learning; and there was a looming shortage of qualified teachers and trainers (EC, 2004).

Early in 2005 a new stage of the Lisbon Strategy was announced. Major EU conferences on higher education and research were organized, and in a follow-up communication on the contribution of universities to the Lisbon strategy (2005), further and wider measures were announced. These initiatives were focused on achieving world-class quality[11], improving governance, and increasing and diversifying funding. The European Commission stated that "while most of Europe sees higher education as a 'public good,' tertiary enrollments have been stronger and faster in other parts of the world, mainly thanks to much higher private funding" (EC 2005, 3). This contrasted with the strong emphasis that many in the higher education community have placed on "higher education as a public good" and on the role of universities with respect to social and cultural objectives rather than economic purposes, especially in the context of the Bologna Process (Van Vught et al. 2002).

The EC identified the main bottlenecks retarding access and excellence as uniformity in provision, due to a tendency toward egalitarianism and a lack of differentiation; and insularity, in that systems remained fragmented between and even within countries, and higher education as a whole remained insulated from industry; over-regulation, in that a strong dependence on the state inhibited reform, modernisation, and efficiency; and under-funding.[12] The pathways to more access and excellence were seen to be more diversity and enhanced flexibility. At this point the Lisbon Strategy absorbed the Bologna objectives of coherent structures, compatibility, and transparency, designed to improve the readability and attractiveness of European higher education internationally. Likewise the Bologna instruments such as the ECTS, IDS, and EQF were taken into the Lisbon agenda. The EC also spoke out for the first time on issues such as the governance and funding of higher education, arguing for greater institutional autonomy, deregulation, and professionalized management, combined with competition-based funding in research and more output-related funding in education, supported by more contributions from industry and from students via tuition fees.

These statements reflected a preference for new public management (NPM) techniques and related to what was seen as "good practice" in certain member states, notably the United Kingdom, where a risky political initiative to raise higher ('top-up') tuition fees in order to provide the university sector with sufficient capital to counteract global

---

Japan (9.7). This is due to career changes, a limited European labor market for researchers, and better opportunities and working conditions in the US (EC 2004).

11.It was explicitly stated as a problem that apart from some British universities there were no European universities in the top 20 of the world and relatively few in the top 50 as ranked by Shanghai Jiao Tong University.

12.EU spending on research (1.9% of GDP) compared badly with the US, Japan, and South Korea (all close to 3% thanks to much higher investments from industry). Higher education spending in the EU (1.1% of GDP) also compared badly with US and South Korea (both 2.7%, again related to differences in private investments). It was calculated that in order to match the US figure, the EU would need to spend an additional EUR 150 billion a year on higher education. It was suggested to set a 2% of GDP aim for funding of higher education (EC 2005).

competition had succeeded by a narrow political margin; and also systems such as the Netherlands where deregulation and institutional autonomy had been advanced. At the same time there had been a more open debate in the Nordic countries about tuition fees for domestic students and differential fees for foreign (non-EU) students[13]. These issues remained highly controversial in other parts of Europe, however.

As well as pushing for the more widespread adoption of these practices, the EU made a notable effort to enhance investments in research, innovation, and excellence. In the context of the EU budget for 2007-2013, introducing major budget growth was planned in order to enable investment in the new Framework Programme for R&D (FP7) and an integrated program for education (the Lifelong Learning Programme).

Midterm concerns and challenges

During 2005 these ambitions were seriously constrained by severe obstacles in achieving a political agreement on the new EU Treaty (the so-called 'European Constitution'), a process that was temporarily halted after French and Dutch referenda failed to gain a majority in favor of the new Treaty, and on the new EU budget. Under the UK presidency of the European Union, the Hampton Court Summit failed to make the intended budget shift from an 'agricultural' to a 'knowledge' Union. Instead of the originally planned EUR 132 billion, a total of EUR 72 billion was attributed to all activities under the heading of competitiveness, growth, and employment.

This included a total (seven-year) budget of 7.5 billion Euro for the newly (2007) established European Research Council (ERC), set up to fund innovative, groundbreaking basic research, with competitive funding awarded based on peer review (as with the National Science Foundation allocations in the US). And a seven-year budget of 50.5 billion Euro was established for the EU's 7th Framework Programme for R&D, which is twice the financial volume of its predecessor (FP6). In comparison: This is a slightly larger budget than the US NSF budget on a yearly basis (6.2 billion USD for 2007), although it represents not even four percent of the total of national R&D (private plus public) budgets of the member states together. Important, therefore, are the bottom-up dynamics that are emerging at the same time through the network of national research councils (ERA-NET), which strives on a voluntary basis for more cooperation between them through transparent peer review, aiming to avoid overlap between national research agendas and pushing for joint calls for proposals (yet still very infrequent). It is expected that the EC may top up such common budgets as to provide a greater incentive to move toward "single pot" funding. Initiatives for such cooperation also emerge on a regional basis, as for instance between the Nordic countries (the NORIA initiative, see below), which may further encourage this type of bottom-up dynamics.

[13] Denmark has, as the first country in Scandinavia, introduced tuition fees for non-EU/EEA students from September 2006 forward in an effort to become more competitive in the global arena.

Table 1: Overall performance on the Lisbon Objectives of the nine largest EU economies, compared to the EU15 average

Rank	Country	Overall Score 2006 Q3	Change in Ranking since then	Rank one year ago	Score one year ago
1	Sweden	1.37	←	1	1.26
2	Belgium	1.09	↑ ↑	8	0.72
3	Netherlands	1.02	↓	2	0.95
4	United Kingdom	0.98	↑	4	0.85
5	Spain	0.98	↓	3	0.87
6	Germany	0.91	↑ ↑	9	0.65
7	EU15	0.90	←	7	0.73
8	Austria	0.83	↓ ↓	5	0.83
9	France	0.80	↓ ↓	6	0.78
10	Italy	0.43	←	10	0.33

(Source: Lisbon Council, 2007)

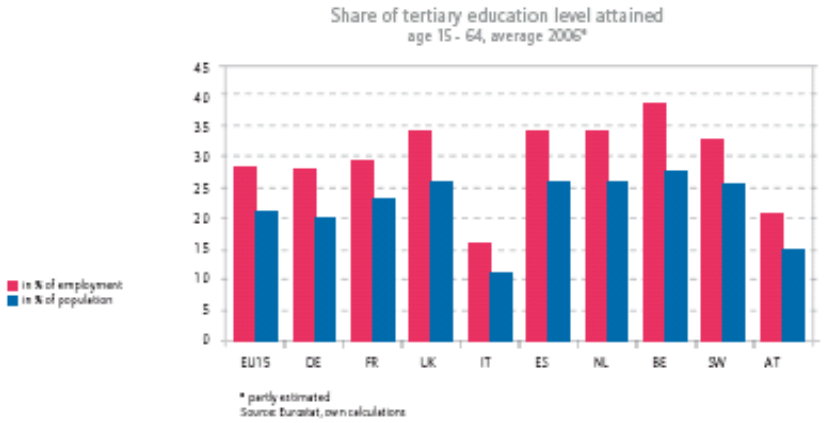
The most recent review of progress in the Lisbon Strategy displays a more optimistic view with respect to the overall objectives of economic growth, employment, and productivity. The February 2007 report of the Lisbon Council stated that: "Now in the 7th year of the Lisbon Agenda some of the objectives finally seem within reach," and that "The famous Lisbon targets have come within closer reach throughout the EU than many had thought possible" (5-6). It should be noted that this review only looked at the largest nine EU economies, comparing them to the EU 15 average (see table 1)[14].

On this basis the report concluded that Europe is doing better economically than it has done in any year since 2000, when economic growth briefly brushed 4%. In particular, growth in the EU-15 was a surprisingly high 2.8% in 2006 – the first time since 2000 that EU countries have come close to meeting the Lisbon target in this vital policy area. And growth has become much more stable; there is no "new economy" hype as there was in 2000 (10). But also that despite the progress that has been made recently, Europe still has low productivity in the services sector – an area which covers 70% of modern economic activity – a fact that many experts blame on the low application of information and communications technology (ICT) in the service sector (13).

Looking at higher education, it can be noted that the overall proportion of employees with tertiary education is steadily rising. In 2006, 29% of the workforce in the EU-15 countries had tertiary or higher education, up from 25% in 2000 (table 2).

[14] An overview of the EU25 (and now even 27) member states would display a different average performance. The extension of the EU with 10+ countries coinciding with the ambition to become the world's leading knowledge economy is seen by many as the main challenge toward achieving these aims.

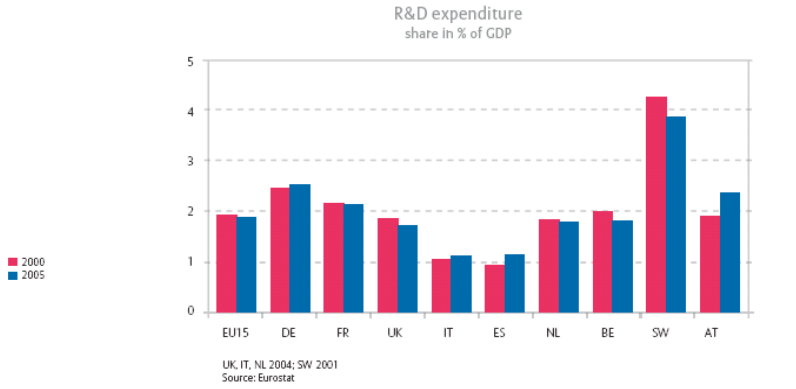
Table 2: Share of tertiary education level attained



(Source: Lisbon Council, 2007)

For research, however, progress is still unsatisfactory; throughout the EU-15 the share of GDP spent on R&D remains stuck obstinately at 1.9% (table 3), far below the prominent Lisbon target of 3% of GDP by 2010 (see 2.5). Considerable differences between countries can be observed: Italy and Spain demonstrate very low scores, while in contrast Sweden is way out front. The report notes that education and research alone are not enough for a knowledge-based economy; equally important are the use of human capital and the diffusion of new technologies. Also, for the share of private investment in R&D, the Lisbon objectives have not yet been met. Currently the private contribution is 55% on average; the Lisbon target is 66%.

Table 3: R&D expenditure in the EU



(Source: Lisbon Council, 2007)

Another recent review of achievements under the Lisbon Strategy (LSE, 2006), which is less optimistic on the wider economic progress, criticizing the failure of EU members to liberalize their product and labor markets, agrees on the weak progress on the R&D side. It underlines that R&D and in particular innovation as a route to growth is sensible, but notes that the cost of patenting in Europe is still about five times the cost of patenting in the United States. And the 'brain drain' from the EU to the United States – because of better research opportunities and higher wages – is still a significant phenomenon and the Lisbon aim of reversing this trend has not materialised (LSE, 2006).

Despite these disappointments, positive points can also be reported. First, the role of the EC, especially in the higher education policy area, has expanded and become less controversial. This is a gain in terms of both legitimacy and coordinating capacity. Second, individual countries have started to respond to the wider EU agenda on global competitiveness. Third, although the overall targets for investments in R&D and higher education have not been reached and many countries do not as yet reach their individual targets; and in some cases investments have even decreased, with the expected additional contributions from private sources proving especially problematic; as noted, several nations have developed initiatives to strive for more excellence and to widen access to higher education, notably the Nordic countries, the United Kingdom, Germany, and the Netherlands.

2. Responses to Global Competition: Some Examples

While the world envies the Nordic countries for appearing at the top of almost every global and certainly European-league table, the Nordics themselves worry about being able to keep their leading position in the field of R&D. A recent report for the Nordic Council of Ministers (intergovernmental forum for co-operation between the Nordic countries)[15] departed from the assumption that the relevance and success of research and its application in the form of innovation is limited by the size of a country. Since all the Nordic countries are small (population-wise), it looks into ways of reaching a critical mass by working more closely together. In admiration of the EU's successful coordination of its member states' research policies, the Nordic countries would likewise develop a joined-up research and innovation policy, and through it, the Nordic Research and Innovation Area (NORIA) (Norden, 2006).

Also, within various individual countries, efforts are underway to respond to global competition. Aimed at strengthening the country's position in the international higher education and research market(s), Denmark engaged in a merger process in order to create fewer but stronger (and larger) universities. Motivations for this merger operation are related to the challenges of increased global competition, of creating world-class universities, of achieving the 3% of GDP target for R&D by 2010 (0.7 % public + 1.7% private in 2005), and of allowing 50% of young people to attend higher education (45% in 2006). The mergers are taking effect from 1 January 2007, bringing the number of universities back from twelve to nine and probably later on to six or seven (Larsen, 2006).

In Germany, the government decided in 2004 to create top universities and research institutes that can compete with the global premier league[16]. The idea was to achieve this through nationwide competition among universities to identify the best research universities and provide them with extra funding to become "elite institutions" or "lighthouses" able to compete on a global level. A budget of 1.9 billion Euro was earmarked for 2006-2011 (Kehm, 2006). In 2003, the Dutch government established an

[15] Nordic co-operation, one of the oldest and most wide-ranging regional partnerships in the world, involves Denmark, Finland, Iceland, Norway, Sweden, the Faroe Islands, Greenland, and Åland.

[16] In this year the first editions of the THES and Jiaotong global university rankings were published.

Innovation Platform, chaired by the Prime Minister, following the example of Finland. Although already initiated in a bottom-up way, the Innovation Platform and the Ministry of Economic Affairs encouraged with a 50 million Euro grant the formation of a federation by Delft University of Technology, Eindhoven University of Technology, and Twente University. Today the initiative is well underway and has established a joint graduate school, joint accreditation, a common framework for the quality assurance of research, and a common scheme for research chairs. On this basis it recently engaged in the joint recruitment of 30 new professors to lead the five new joint centers of excellence that have been established (3TU, 2005).

Responses from the institutional level can be illustrated by the establishment of the League of European Research Universities (LERU[17]). LERU was founded in 2002 by a group of twelve European research-intensive universities concerned with the question of how to ensure that more of our European universities join Oxford and Cambridge at the top of the world university rankings. In their view, the European universities need greater autonomy to respond rapidly to challenges and opportunities, combined with much greater investment to ensure that the best compete at the highest international levels of excellence. Another example concerns the 2004 merger of UMIST and the Victoria University of Manchester to create the UK's largest single-site university: the University of Manchester, in order to match the leading universities in the world, i.e., to become one of the top 25 strongest research universities in the world by 2015.

The examples presented above illustrate responses to global competition and clearly indicate the important role that international rankings of universities play in this respect. All of these responses have both cemented the role of the rankings themselves and further intensified competitive pressures. Yet as rankings seem to be here to stay, they are far from problem-free (Marginson & Van der Wende, 2007). In Europe the CHE Ranking developed in Germany presents a strong example of how spurious holistic ranking can be avoided and is well-positioned to develop into a European-wide system. In order to encourage institutions to design different missions and profiles, allowing them to excel in a variety of domains, and to ensure transparency for stakeholders at the same time, a typology (classification) of higher education institutions in Europe is being developed (Van Vught et al, 2005; forthcoming).

3. Conclusions and Reflections

Governments have to consider what is the best way to make the national higher education system more globally competitive: national or European-level cooperation or competition, or (more likely) a mix of these four options. National policies often demonstrate combinations of the various strategic options. For example measures to make national research funding more competitive through the national research council may be combined with policies that urge institutions to cooperate more closely within the national context, for example through mergers.

[17] LERU includes the Universities of Amsterdam, Cambridge, Edinburgh, Freiburg, Genève, Heidelberg, Helsinki, Leiden, Leuven, University College London, Lund, Milan, Munich, Oxford, Paris 6, Paris-Sud 11, Karolinska Institute, Strasbourg, Utrecht, and Zürich.

At the same time institutions are stimulated to cooperate at the European level by participating in EU R&D projects, and the government supports the establishment of the ERC as it believes that competitive funding measures are even more effective at the supra-national level. Similar examples could be given for the teaching function. This illustrates how complex the environment is for institutions in terms of partners, competitors, and strategic options. Consequently the outcome of the process at a meta-level is ever more difficult to predict. Clearly, successful strategies depend on the right mix of competitive and cooperative options (Van der Wende, 2007).

Overly simplistic or one-sided competitive models will enhance vertical differentiation by building strength in certain institutions or areas by weakening others and may in fact lead to a lack of diversity (Marginson & Van der Wende, 2007). Therefore these choices need to be guided by a vision of an effective division of labor and a good balance between global competitiveness, European excellence, and national priorities and interests (including issues of cultural and linguistic diversity). The development of such a vision is not bound to national-level actors. Also the EU as a whole has been urged to better define its priorities and opportunities for cooperation and competition in a wider international context (EURAB, 2006). Scenario studies indicate that specialization and concentration in the research function of the university will increase (OECD, 2006) and, as mentioned before, this may lead in Europe to a concentration of this function and related type of HEIs in the northwest of Europe (Enders et al, 2005).

On the one hand the EU is considered as an 'area' for higher education and research, as indicated in the European Research Area (ERA) and the European Higher Education Area (EHEA), in which cooperation is traditionally seen as the pathway towards stronger global competitiveness of the EU as a whole. On the other hand the EU is seen as an internal market subject to internal competition strategies, which were likewise introduced to achieve stronger global competitiveness. This latter principle is starting to affect the higher education sector more than before, i.e. in the ERC and notably, under the Services Directive[18]. This mixed reality implies a certain degree of conceptual and political confusion as to how the higher education and research sector is to be interpreted in terms of supra-national steering and how its dynamics should be understood in the light of global competition.

Olson (2005) underlines the existence of competing visions in Europe, among the university as a service enterprise in competitive markets, the university as an instrument for national political agendas, and the university as a public service model based on the argument that higher education cannot be solely market-driven because the logic of the market does not apply easily to education. He regards the situation as unsettled, given the multitude of partly inconsistent criteria of success and competing understandings of what forms of organization and governance will contribute to good performance. Jacobs and Van der Ploeg (2006) also argue that higher education cannot be left to the market

[18].The proposed EU directive on services in the internal market seeks to remove barriers to the freedom of establishment for service providers in Member States and barriers to the freedom to provide services as between Member States. Higher education (as a sector providing services) is not excluded, although it is not clear yet what exactly the impact of the new directive will be on cross-border activities in higher education. This directive was developed by the EC's directorate for the internal market and can be seen as an example of wider EU policy interfering with higher education policies and as an EU equivalent to GATS, a trade framework which also intervened with higher education, but which was dealt with by yet another EC directorate (for trade).

alone and that government interference may be necessary to correct for market failures. In their view, the challenge for reform of the European system is to achieve the diversity and quality for which the US system is praised: choice, differentiation, and competition.

But Europe should not throw away the baby with the bathwater, i.e., it should not only invest in top academic universities but should also maintain and cherish the high average quality of its institutions. Van Vught (2006) is also concerned about the potential for simplistic market-type strategies in relation to the social dimension of higher education.

The introduction through public policy of increased competition does not necessarily lead to more responsiveness of higher education institutions to the needs of the knowledge society. Rather than being driven by a competition for consumer needs, higher education institutions are driven by a competition for institutional reputation. In addition, the creation of more institutional autonomy in such a 'reputation race' leads to cost explosions, related to hiring the best faculty and attracting the most talented students; institutional hierarchies; and social stratification of the student body. Instead, the coordinative capacity of the market should be used, consisting of a new set of "social contracts," which lay down the mutual obligations between universities and their stakeholders, including business and industry. For the EU, however, this implies that an inverse tendency needs to be addressed. The European business community has an increasing propensity for technological alliances with US firms, while the European academic community has an increasing propensity for intra-European partnership. There is still a considerable lag in cooperation between enterprises and universities within the EU, compared to the US and Japan (Archibbugi & Coco, 2004).

Finally, Europe demonstrates striking internal differences in performance between countries and systems, differences that are large, deep-rooted, and difficult to overcome. The EU includes some of the top higher education systems in the world, performing on a par with and on some measures performing higher than the US and Japan, as well as a range of new member states that are at a very different overall technological level to that of the EU15 group. Effective solutions for accommodating this diversity and lack of cohesion in terms of supra-national decision making require major institutional reforms at EU level, which have yet to be established.

REFERENCES

3TU (2005). *Bestuurlijke Agenda 2005/2006. Gemeenschappelijke regeling Technische Universiteiten.* Federatie van Technische Universiteiten in Nederland i.o.

Alesi, B., S. Burger, B. Kehm and U. Teichler (2005). *Bachelor and Master Courses in Selected Countries Compared with Germany.* Federal Ministry of Education and Research, Bonn/ Berlin.

Archibugi, D. and Coco, A. (2004) Is Europe becoming the most dynamic knowledge economy in the world? *Journal of Common Market Studies*, 43 (3), pp. 433-459. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=786101 See also http://www.ces.fas.harvard.edu/publications/ArchibugiTech.pdf

Birnbaum, R. (1983). *Maintaining Diversity in Higher Education*. Jossey-Bass Publishers, Washington.

Enders, J. J. File, J. Huisman & D. Westerheijden (eds.) (2005). *The European Higher Education and Research Landscape 2020. Scenarios and Strategic Debates*. CHEPS/UT.

EUA (2006). *The contribution of universities to Europe's competitiveness*. Speech of EUA President Prof. Georg Winckler to the Conference of the European Ministers of Education, Vienna, 16–17 March 2006. http://www.eua.be/eua/jsp/en/upload/EUA_Winckler_Speech_160306.1142503291615.pdf

European Commission (2001). *Communication of the European Commission to the European Parliament and the Council on Strengthening Co-operation with Third Countries in the Field of Higher Education.* EC, Brussels.

European Commission (2002). *The concrete future objectives of education systems*. Report from the Commission. EC, Brussels.

European Commission (2003a). *Communication from the Commission. The role of universities in the Europe of knowledge.* COM(2003) 58 final. EC, Brussels.

European Commission (2003b). *Key figures 2003-2004. Towards a European Research Area*. *Science, Technology and Innovation.* EC, Brussels.

European Commission (2003c). *Brain drain study – Emigration flows of qualified scientist.* Study carried out by Merit. http://ec.europa.eu/research/era/pdf/indicators/merit_exsum.pdf

European Commission (2004). *Education & Training 2010. the success of the Lisbon Strategy hinges on urgent reforms. COM(2004) 685 final.*

European Commission (2005). *Communication from the Commission. Mobilising the brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy.* COM(2005) 152 final.

European Commission (2005). *Communication from the Commission. Mobilising the brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy.* COM(2005) 152 final.

European Commission (2006). *Communication of the European Commission to the European Council. The European Institute of Technology: further steps towards its creation*. COM(2006) 276 final.

European Research Advisory Board (2006). *International Research Cooperation*. Final Report EURAB.

Gornitzka, A. (2005). *Coordinating policies for a "Europe of Knowledge". Ermeging practices of the 'open method of coordination' in education and research*. Arena Working Paper No. 16, Oslo. http://www.arena.uio.no

Gurria, A. (2007). *Human Capital: Europe's Next Frontier.* Schuman Lecture 2007, for the Lisbon Council. Brussels, 27 February 2007.

Huisman, J. and van der Wende, M.C. (eds.) (2004). *On Cooperation and Competition. National and European policies for internationalisation of higher education*. ACA Papers on International Cooperation. Lemmens, Bonn.

Huisman, J. and van der Wende, M.C. (eds.) (2005). *On Cooperation and Competition II. Institutional responses to internationalisation, Europeanisation and Globalisation*. ACA Papers on International Cooperation. Lemmens, Bonn.

Jacobs, B. and van der Ploeg, R. (2006). *Guide to reform of higher education: a European perspective.* Economic Policy, Vol. 21, Issue 47, pp. 535-592.

Kehm, B. (2006). *The German Initiative for Excellence: Restructuring the German University Landscape.* Paper presented at the EIB/EJE Joint Workshop European Universities in Search of Excellence. 17 November 2006, Luxembourg.

Larsen, S. (2006). *Mergers among Danish universities – research policy considerations.* Danish Council for Research Policy. Meeting of the Heads of Secretariats of the National Advisory Councils for Science and Technology Policy of the EU member countries. Dublin, 2006.

LERU (2006). *Putting European Research and Higher Education first.* Annual report 2005.

Lisbon Council (2007). *European Growth and Jobs Monitor. Indicators for success in the Knowledge Economy.* Frankfurt/Main: Allianz Dresdner Economic Research.

London School of Economics and Political Science (2006). *Boosting Innovation and Productivity Growth in Europe: The hope and the realities of the EU's 'Lisbon agenda'*. London: LSE, Centre for Economic Performance.

Lub, A., van der Wende, M. and Witte, J. (2003). The implementation of the bachelor-master system in Germany and the Netherlands, *TEAM,* 9, pp. 249-266.

Marginson, S. & M.C. van der Wende (2007). *Globalization and Higher Education*. Paris: OECD. http://www.oecd.org/dataoecd/33/12/38918635.pdf

Norden (2006). *Building Nordic Strength through More Open R&D Funding – Study 3 . The Next Step in NORIA.* Copenhagen, Nordic Council of Ministers.

Olson, J.P. (2005). *The Institutional Dynamics of the (European) University*. Arena Working Paper. www.arena.uio.no.

Organization for Economic Cooperation and Development, OECD (2006). *Four Futures Scenarios for Higher Education*. http://www.oecd.org/dataoecd/30/5/36960598.pdf

Reichert, S., and Tauch, C. (2005). *Trends IV: European universities implementing Bologna*, EUA, Brussels.

Reinalda, B. & E. Kulesza (2005). *The Bologna Process: Harmonizing Europe's higher education*, Barbara Budrich Publishers.

Vught, F. A van, van der Wende, M.C. & Westerheijden, D.F. (2002). Globalisation and internationalisation. Policy agendas compared, in J. Enders & O. Fulton (eds.) *Higher Education in a Globalizing World. International trends and mutual observations*. Kluwer, Dordrecht, pp.103-121.

Vught, F.A. van (2006). Higher Education system dynamics and useful knowledge creation, in J. Duderstadt and L. Weber (eds.) *Universities and Business: Partnering for the Knowledge Society*. Economica, New York. Pp. 63-79.

Vught, F.A. van, Bartelse,J., Bohmert,D., Burquel, N., Divis, J., Huisman J., and van der Wende, M.C. (2005). *Institutional Profiles. Towards a typology of higher education institutions in Europe*. Report to the European Commission. http://www.utwente.nl/cheps/documenten/engreport05institutionalprofiles.pdf

Van Vught, F.A., J. Bartelse, D. Bohmert, J. File, C. Gaethgens, S. Hansen, F. Kaiser, R. Peter, S. Reichert, P. West, M. C. van der Wende (forthcoming). Mapping Diversity: Developing a Classification of European Higher Education Institutions. Report to the European Commission.

Wende, M.C. van der (2007). Internationalisation of Higher Education in the OECD countries: Challenges and Opportunities for the Coming Decade. In: *Journal on Studies in International Education* Vol. 11, no. 3-4 , pp. 274-290.

Witte, J. (2006). Change of degrees and degrees of change. Comparing *Adaptations of European Higher Education Systems in the Context of the Bologna Process.* CHEPS/UT: Dissertation.