

CHAPTER

European Strategy to promote the Knowledge Society as a Source of renewed economic Dynamism and of social Cohesion

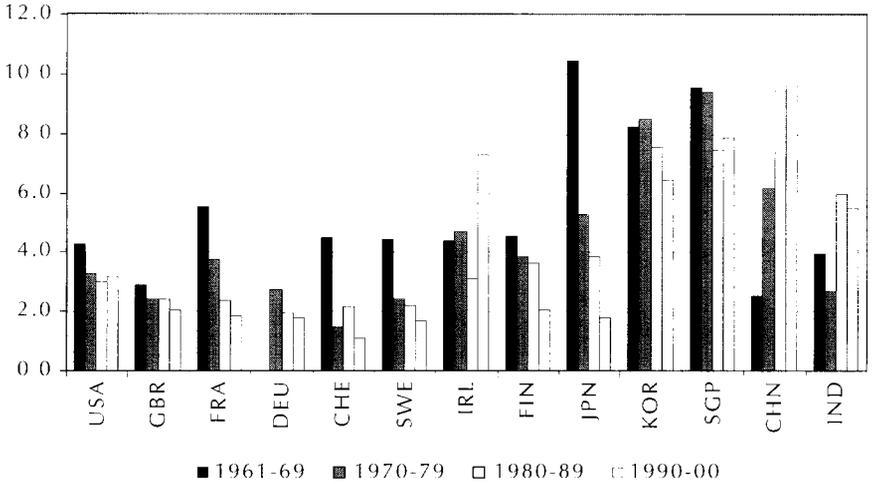
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PREAMBLE

Since the 1950s, Europe has been engaged in an ambitious political and economic integration process which received a new boost with the fall of the Berlin wall in 1999 and, soon afterwards, the collapse of the communist USSR. Twenty-five countries now make up the enlarged European Union, soon to be 27, with more expected to join later. Few people doubt that this free market of 450 million people is beneficial to the citizens of Europe. Nevertheless, Western Europe, and in particular the countries which adopted the Euro, is suffering from a slowdown in economic growth, as well as high unemployment and a rapidly ageing population. At the same time, the economies of the East European countries which recently joined the E.U. are taking off, the United States is benefiting from more than 15 years of solid economic growth, and many Asian countries, in particular China, India and South Korea, are becoming major economic powers, as peasant societies and models of mass production transform themselves into genuinely innovatory producers. Figures 1 to 3 below illustrate some of these facts. (see also OECD, 2005a & b)

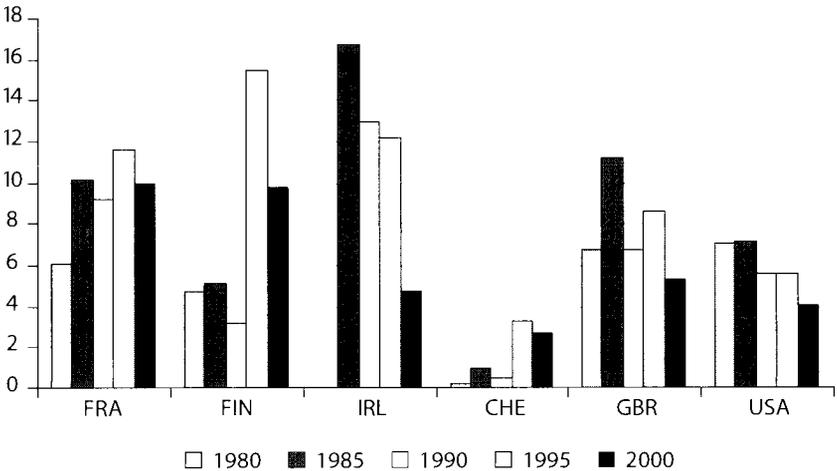
¹ I am very grateful to Dr. David Maradan, of the Department of Economics at the University of Geneva, who collected the data and prepared figures 1 to 4.

Figure 1: Average annual growth rate of GNP in selected countries



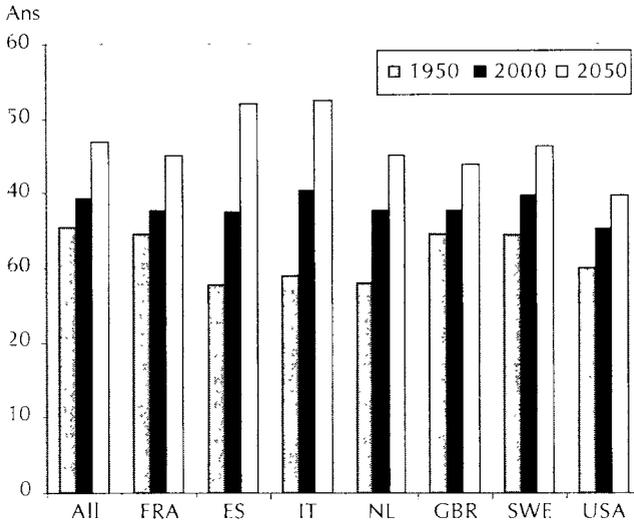
Source: World Bank

Figure 2: Unemployment in several European countries



Source: Eurostat

It is highly unlikely that Western Europe will be able to maintain its high living standards, envied by many, if it does not take action to revive economic growth. Most experts agree that Western Europe has four possible options:

Figure 3: Evolution of median age in several European countries and in the U.S.

Source: Algave & Plane, 2004

a) encourage immigration by many young, preferably qualified, individuals, a measure which would certainly prompt strong opposition among the general public; b) ensure that the relatively generous social welfare system remains “sustainable” in a period in which population is ageing and economic growth is slowing down, thus presenting a major challenge; c) increase economic growth by eliminating the numerous barriers to competition; and d) investing more in the knowledge society as a source of economic dynamism.

In this introductory contribution to the theme of the fifth Glion colloquium, written from a European perspective, I shall focus on the fourth pillar of regained economic dynamism, the development of the knowledge society. This action was launched politically at the 2000 Council of the Heads of State of the European Union in Lisbon (Lisbon European Council — President’s conclusion, 2000) — henceforth referred to as the “Lisbon agenda” — with the following statement: “To become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion”. Inspired by the development of the European Higher Education Area (EHEA) — better known under the name “Bologna process”, the strategy was to create, for research, the European Research Area (ERA) (Commission of the European Communities, 2000) and to raise investment in research to an average of 3% of GNP (for more details, see, for example, Weber & Zgaga, 2004).

Five years later, at mid-term, it appears that the European Union is not on track to reach the ambitious political goal set for 2010. This is due to at least two reasons: weak economic growth in the larger European nations, creating major obstacles in public finances; and the fact that the implementation of the goals set at the level of the European Union relies strongly on the efforts of member countries and on industry. Some, in particular the Scandinavian countries, continue to invest heavily in higher education and research, and some, like the U.K., are increasing their efforts, but the situation is in general getting worse in most other countries.

Conscious of this programme failure, the new European Commission, in office since November 2004, is trying to restart the process. It has just published a Communication, "Working together for growth and jobs, a new start for the Lisbon Strategy" (2005a), addressed to the spring 2005 European Council. Although this communication suggests action in a variety of domains, it appears as if Higher Education and Research (HE/R) had never been so high on the European Commission's agenda. The speech that President Barroso addressed to 600 university leaders meeting in Glasgow for their biannual convention speaks for itself: the title was "Strong universities for Europe". Moreover, the Commission has just published a new communication aimed at universities, with the title "Mobilizing the brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy" (2005b), and is going to publish later another communication on the role of universities in research. Will these new initiatives be more successful than the previous one? At this stage, it is difficult to say, as it depends on so many actors and factors and, in particular, on the policies implemented in the members countries, as well as in European countries that are not members of the European Union.

This introductory contribution begins by showing that Europe's investments in higher education and research are lagging behind. Then, it briefly examines the main articulations of the policies put in place over the last five years or about to be launched to restart the "Lisbon agenda". It finishes with a few comments and a set of questions addressed to the colloquium.

EUROPE AND THE KNOWLEDGE SOCIETY: THE PRESENT SITUATION

Higher education and research (HE/R), economic growth, employment and quality of life

Education has numerous functions in modern societies: intellectual and democratic training, acquisition of professional skills, knowledge production, etc (Cohen, 2005). It is a rational strategy for individuals to invest in their human capital as it increases their productivity, which means higher salaries, and it

reduces the risk of long-term unemployment. The investment in human capital is also an excellent policy for society as a whole, as it contributes to economic growth and development (Aghion & Cohen, 2005). Recent studies have shown that the closer a country is to the “technology frontier”, the more profitable it is to invest in knowledge through higher education and research. For a country far from the technology frontier, it is more profitable to grow by adapting technology from the most advanced countries and therefore to invest in primary and secondary education. When a country approaches the technology frontier, the possibilities of imitation become more limited and it then becomes more profitable to invest in higher education (Cohen, 2005).

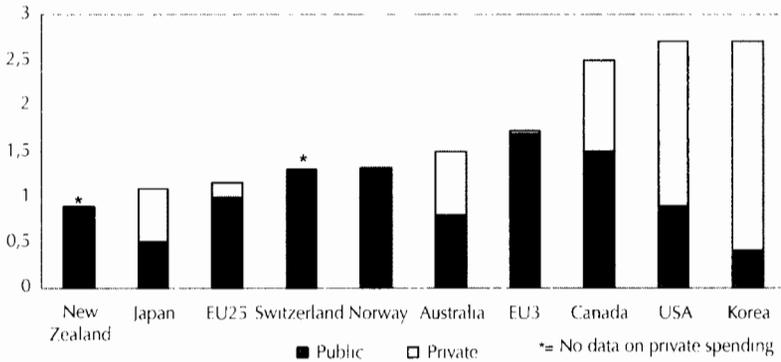
HE/R and a society based on knowledge are also necessary conditions — but not sufficient — for the promotion of democratic values, social cohesion, cultural development and individual security and well-being.

It is therefore obvious that for individuals and society as a whole, expenditures in HE/R have to be considered as investment and not as consumption expenditures.

European investment in Higher Education and Research is lagging behind

At first sight, in the light of Europe’s standard of living and quality and sophistication of industrial products and services, one could get the impression that the European level of investment in HE/R is sufficient. However, as Mora (2005) and Cohen (2005) have shown at a conference organized by the European Commission in February 2005, “total expenditure on higher education in Europe has not increased in proportion to the growth in the number of students. A substantial gap has opened up with the U.S. and other developed countries” (Mora, 2005). In 2004, while Korea, the U.S. and Canada spent more than 2.5% of GNP on higher education, this ratio lies between 0.9% and 1.8% in European countries, with France, Germany and the U.K. spending just a bit more than 1% (see figure 4 for an overview). This gap is also confirmed if we consider expenditures per inhabitant. Perhaps the most striking fact is that the source of this considerable variance is to be found overwhelmingly in private investment — students’ fees and private funding provided by the business sector and foundations, as well as from the endowment funds in research universities. Whereas private funding accounts for two thirds of the total funding in American universities, in most European universities that proportion is around 10% (Mora, 2005; Commission staff working paper, 2005a).

The situation is very similar for research. In 2004, Europe’s total investment in research amounted to 1.97% of GDP, whereas the U.S. invested 2.76% and Japan 3.12% (Commission staff working paper, 2005a). The gap

Figure 4: Total Investment in tertiary Education as a Percentage of GDP, 2001

Source: European commission, Staff working paper, Annex to the Communication *Mobilising the brainpower of Europe* (2005a). (EU3=Denmark, Finland and Sweden, the three best performing countries).

with the U.S. in research investment is estimated by the European commission to be €130 billion a year and might be widening. However, when analysing the origin of the gap, it is important to keep in mind that 57% of the U.S. Federal Government Research and development funding is appropriated to national defence research (Morgan, 2005).

When analysing these figures, we must be aware that we are considering input figures, which leads us to assume that the efficiency of the system is the same. However, even if it was possible to prove that the European HE/R systems were more efficient than those of the leading countries — though we do not have any strong evidence supporting it — the gap is obviously important and the theory shows that, in any case, higher investment would contribute to higher economic growth and employment.

These global figures do not reflect the important regional disparity between countries. For research, in particular, the overwhelming volume of fundamental and applied research is carried out in a triangle located in North-West Europe, whose origin lies somewhere around Vienna. The ranking of the best European research universities proves this unambiguously. If we believe that university education must be based on research, we can also extrapolate that the content of teaching is better in this part of Europe than in the rest of the continent.

European diversity and economic development

Europe is a conglomerate of nearly 50 States, some very small, with a total population of 800 million inhabitants. They all have their specificity regarding standards of living, history, culture, traditions, language, education sys-

tems, governmental and administrative, as well as economic systems. This diversity is a great asset and strength if there is people's mobility and permeability to ideas and practices from other countries. But it is also a burden because it makes cross-border relationships more costly and because the multiplication of systems — basically to resolve similar problems — imposes higher transaction and efficiency costs.

EUROPEAN POLICIES TO PROMOTE THE KNOWLEDGE SOCIETY

Tendencies in the 1980s and 1990s

Considering any development in Europe, policies conducted by countries within and outside the EU are determinant, despite the growing importance of the European Union. Globally, it is fair to say that HE/R have not been a priority of governmental policy in recent decades in the great majority of countries, with the consequence that the investment per head in higher education decreased significantly in most countries due to the massification of student numbers. Moreover, in many countries, doubts about the efficiency of the sector are at the origin of increased political pressures. Apart from Ireland and Finland in particular, which believed in HE/R as an engine of economic development, most of the impetus came from the European Union. The two flagship programmes are the “research framework programmes” launched in the early 1980s to stimulate joint research programmes between university and industry as well as institutions from various countries, and the “Erasmus program” established in 1987 to encourage student and staff mobility between participating countries for 1-2 semesters. Although quite successful if we consider that more than 1.2 million students have benefited from it, the Erasmus program concerns only a small proportion of the total number of European students. The research framework programmes in their early versions were focused on applied research and development — therefore being mainly of interest for industry and applied science higher education institutions.

The emergence of Higher education and research as a factor of prosperity

The turn of the millennium has witnessed the launch of two very important initiatives aiming at creating a European area of higher education and another one for research (see, for example, Weber & Zgaga, 2004).

The European Higher Education Area (EHEA). The initiative to introduce the European Higher Education Area (EHEA) was launched in 1998 by the Ministers of Education of France, United Kingdom, Germany and Italy at the

celebration of the 700th anniversary of La Sorbonne in Paris — independently of the European Union — and confirmed a year later in Bologna (Italy) where 29 countries signed a declaration aimed at creating a European Higher Education Area (EHEA) without borders by 2010. The central idea of the so-called “Bologna process” is to promote student and staff cross-border mobility thanks to the adoption by participating countries of a system of “Bachelors” and “Masters”, and to the introduction of a harmonized credit system (European credits transfer system or ECTS).

In order to take stock of the progress made and to give new impetus to the process, the ministers in charge of higher education meet every two years to evaluate progress made (Prague in 2001, Berlin in 2003, Bergen in 2005 and London in 2007) on which occasions they adopted new members (45 out of the 48 European countries are now participating in the process) and new pillars, the most important one being to add in 2003 doctoral studies as a third higher education cycle, in order to secure the link with the European research area (for more information, see the Bologna secretariat 2005-2007 website).

At mid-term of the process, it is amazing to observe that all but three European countries, including Russia, have decided to participate in this large-scale exercise of transparency, but also to see that the implementation is well underway (see for ex. Reichert & Tauch, 2005). This implies a gigantic — some call it revolutionary — reorganization of the study programmes in approximately 4,000 higher education institutions, universities and professional/vocational colleges. Moreover, to guarantee the necessary trust between institutions to make sure they will accept students who have acquired a certain number of credits in another institution, particularly in another country, the quality of institutions and its audit, as well as the recognition of degrees, have moved to the centre of preoccupations in European countries.

Moreover, the discussion about quality as well as the necessity for institutions to adapt more rapidly to a changing environment helped to reveal that the governance of higher-education systems at national or regional levels and of nearly all European institutions was not favourable to decision-making, certainly rapid decisions, encouraging a few countries and institutions to adapt their system to 21st century requirements.

With the first groups of students to receive the new “bachelor” presently graduating, it is much too early to judge if the process will deliver its promises regarding students and staff mobility, which have become a necessity to secure that the European diversity is an asset, as well as to promote the transparency and readability of the European higher education system, a necessary condition for its attractiveness to non-European students. Although the European higher education system will remain quite diversified, the Bologna process acts presently as a strong engine of change and of adaptation to the climate of increasing competition in a globalized world.

The European research Area (ERA): Well aware that knowledge is the essential engine of economic development and that Europe is not investing as much as countries like the U.S. or Japan in the development of new knowledge, the Heads of State of the European Union decided in 2000 in Lisbon to increase their national and common (through the budget of the European Union) investments in research and technology development in order to become “the most competitive and dynamic knowledge-based economy of the World by 2010” (Lisbon European Council – President’s conclusion, 2000). The strategy proposed was to create the “European Research Area” (Commission of the European Communities, 2000) in better integrating national efforts by encouraging researchers to work together at the European Union level, by promoting cooperation between university and industry and by lowering administrative and political barriers to that cooperation (Weber & Zgaga, 2004). Two years later, the European Commission issued a communication, “More research for Europe, Towards 3% of GDP” (2002), stating that the only way to reach the ambitious target set in Lisbon in 2000 was to increase the general effort made in research to reach 3% of GDP and that two thirds of this effort should be made by private industry (Weber & Zgaga, 2004). In order to reach this 3% objective by 2010, the public sector and companies should increase their expenditure on research by an ambitious 6.5% and 9.5% respectively on average each year and the number of new researchers in Europe should increase by 700,000 persons or approximately 70%!

Considering the extremely high ambitions of the Lisbon agenda, it is not really surprising that the European Union is, at mid-term, far from its 2000 objective, in particular because the implementation of reforms in Member States has been quite scarce and the additional financing has been provided neither by the public sector, nor by companies (Kok, 2004). The hard truth is that the gap in research investment between Europe and its main competitors — traditionally the U.S. and increasingly from Asia — is actually increasing. Obviously, self-persuasion is not sufficient, and the European Union, as the promoter of a renewal of the conditions for economic growth in Europe, cannot produce a miracle with its own very limited budget, particularly as the Union has also difficulties in materializing these future-orientated priorities in its own budget.

A new start for the ‘Lisbon Strategy’?

In view of the fact that in the face of international competition and an ageing population, economic growth could soon decrease to 1% per year (less than half today’s growth rate), the much valued social and environmental European model will become unaffordable. This hard reality, described by the Sapir (2003) and Kok (2004) reports, encouraged the new European Commission put in place in November 2004 under the presidency of Barroso to take

the necessary initiatives to initiate a new start to the “Lisbon Strategy”. In a new communication to the spring European Council (2005a) the Commission is proposing to establish a new kind of partnership with Member States and to focus efforts on productivity and employment.

Observed by a university leader, never have HE/R been so high on the agenda of the European Commission! Following a renewed action plan focused on the contribution of Higher education and research to the knowledge society, the Directorate general for Education and culture drafted a communication to boost the role of higher education and research in developing the knowledge society, “Mobilising the brainpower of Europe” (2005b), proposing an action plan to reinforce European universities, which followed another communication “The role of universities in the Europe of knowledge” (2003). The Directorate General for Research, Science and Society organized last year an important conference in Liege on “Europe of knowledge 2020” (2004), then created a Forum on university-based research which published the report “European Universities: enhancing Europe’s Research base” (2005), and is presently drafting another communication on the topic. The change of policy, if accepted by the European Council and Parliament, should produce a doubling of the part of the EU budget allocated to policies aimed at increasing growth and employment, at supporting innovation and spreading knowledge through high quality education. However, it is all but certain that the means to reach this ambitious European goal will be set aside, in particular thanks to a decrease of the share allocated to the European common agricultural policy.

Regarding research more specifically, the European Commission is proposing to double the budget allocated to the seventh framework programme for the period 2007-2013. The proposed new programme (Commission, 2005c) will basically be a continuation of the previous programme with support for cooperation between researchers from different origins, university and industry, a form of direct support to researchers and infrastructures. However the programme includes a very important and interesting innovation for research-intensive universities, the creation of a European Research Council (ERC). This council will, exclusively on the basis of merit, allocate grants to young researchers and new groups as well as established teams active in the most promising and productive areas of research, within and across disciplines, including engineering and social sciences and the humanities. The Commission also promises to simplify the appropriation procedures, which rightly have a reputation for being very bureaucratic and using more often lump-sum financing or grants (Commission staff working document, 2005b).

Among other initiatives, we note that the Commission (2005a) will propose the creation of a “European Institute of technology”, which, according to early discussions, could take the form of a network of leading universities in

science and applied science. We also observe a genuine interest in the statutes of researchers. Moreover, the improvement of technology transfer remains a very challenging issue for European university and industry.

The policies regarding higher education are largely a continuation of the policy launched in 1999 in Bologna. Although important politically, the enlargement of the Bologna signatories to 45 countries at the Bergen summit (Communiqué, 2005) is significant for the contribution of higher education to the “Lisbon agenda”, in particular the decision to introduce doctorate studies in the Bologna process in Berlin in 2003, thus making sure that the EHEA and ERA will be strongly linked together through the doctorate studies. This has stimulated an intensive collective inquiry on how to make doctorate studies attractive, not only for those looking for academic positions, and how to best organize them. Some other positive benefits are also the intensifying discussion about the organization of joint degrees — masters and doctorates — between two institutions, quality assurance and audit, governance, funding and the link between higher education and research.

CONCLUSION

Despite its great potential due to its cultural diversity, good education and huge market, Europe is not doing well economically: economic growth is moderate and the trend is decreasing, the population is rapidly ageing, and the social system that Europe is proud of is not sustainable under these conditions. Moreover, high employment rates in many countries cast a shadow over the quality of its social model and of its environment.

Most countries, in particular in the west, are struggling to put courageous policies in place, but governments have difficulties obtaining a majority because individuals and organizations attach increasing weight to their own interests.

The European Union, whose budget is less than 1.5% of GNP, tries to initiate pro-active policies of change thanks to analysis, suggestions and exhortations. However, it cannot act as a real European government would do without strong, even unanimous, support from the member States and the majority of the European parliament. Moreover, the European Union must make a great effort to support the development of the poorer regions of Europe, mainly in the South and now in the East in the ten — soon 12 — countries which just joined the Union.

The importance of HE/R has grown over time, but it is only quite recently that it has been considered as a key instrument to make sure Europe becomes again very competitive in order to financially support its developed social system and to challenge the good economic performance of the U.S. and rapid development of many Asian countries.

Two important initiatives have been taken at the turn of the millennium: the creation by 2010 of the European higher education area which now concerns the whole of Europe (apart from three countries) and the launch of the "Lisbon agenda" of regained competitiveness thanks to a massive investment in knowledge, with a strong effort on research.

The simple fact that so many countries have agreed to work together to eliminate the multiple barriers which till recently made the idea of a European higher education area just a dream and to join forces in research is remarkable and, no doubt, will have very positive effects in the future.

However, it would be wrong to neglect the level of ambition and complexity of the task. Regarding higher education, there will still be for many years nearly 50 countries with different systems and rules. Obviously, everyone will have adapted their system by 2010 according to their interpretation of the Bologna objectives and their capacity to manoeuvre, but there will still be differences or even new differences will be created, which will constitute obstacles to mobility. Moreover, the quality level of institutions will remain very different, which means that it would be wrong to expect that good institutions will accept those students coming from lower level institutions without special requirements. Considering the financial barriers to mobility and the still strong tendency for students to study first in their regional university, it would be too ambitious to imagine that all students or even a majority of students will take advantage of the enrichment of spending study time abroad or even complete their studies by visiting two or three universities. On a more optimistic note, I believe that the incitation to offer joint programmes between two or more universities will improve the quality of the teaching programmes offered jointly. Due to the relatively small size of European universities, networking is a necessity, all the more so as they can be a first step towards merging. Finally, the broad effort put on quality education and institutions is generally welcome, provided the bureaucratic tendencies of some quality agencies do not take over systems which are owned by the institutions themselves.

Regarding research, the increased budget devoted to research and the creation of the European research council at the European Union level are also generally welcome developments. However, I do not see how many Member State governments can increase their budget for HE/R considering the disequilibrium of their public finances and the fact that social tasks like old-age pensions and health will be increasingly demanding with the ageing population. More than that, I am wondering how (on the basis of which analysis) the objective that European countries should on average invest 3% of GNP for research has been fixed. Probably, it is because it corresponds to the level of the U.S. investment. However, to believe that 3% is a correct target because it is the U.S. level of investment implies that we assume that the efficiency of research spending in the U.S. and in Europe is similar. Is it? Perhaps, but nobody knows.

In the matter of financing, there are two sources of funding which are still not really exploited in Europe, in particular the individual financial participation to higher education and donations from companies as well as foundations. Although this topic was traditionally a taboo in most European countries, the atmosphere is changing in the sense that it is now possible to raise the issue in most circles. However, few countries are ready to introduce substantial students' fees (for example, covering 25% of the average study costs). Moreover, universities are not yet ready to launch fund-raising campaigns within their alumni as very few institutions keep in touch with them.

Finally, perhaps the biggest weakness of the European system compared with the U.S. one lies with the governance/leadership of European universities. Presently, in nearly all institutions, it is extremely difficult to make substantial changes due to internal resistances and blockages. Most leaders do not have the competence and are also probably too near in their status to the deans and professors to take a real leadership role. Moreover, too many leaders do not have enough professional training to lead a huge institution like a university. Europe would be well advised to work on that too.

REFERENCES

- Aghion, Ph. & Cohen, E. (2004), *Education et croissance*, La documentation française, Paris.
- Algate, E. & Plane, M. (2004). *Viellissement et protection sociale en Europe et aux Etats-Unis*. Etudes et Résultats No. 355.
- Barroso, J. M. (2005a). *Europe 2010: a European renewal*, speech at the World Economic Forum plenary session. Davos, 29 January.
- Barroso, J. M. (2005b). *Strong Universities for Europe*, speech at the Convention of the European University Association. Glasgow, 2 April.
- Bologna secretariat website (2005-2007). <http://www.dfes.gov.uk/bologna/>
- Cohen, E. (2005). "Funding Strategies to increase/improve investment", Conference *Enabling European Higher education to make its full contribution to the knowledge economy and society*, Brussels, 10 February. http://europa.eu.int/comm/education/policies/2010/doc/conference2005/plenary_1_cohen_paper.pdf
- Communiqué of the Conference of European Ministers responsible for Higher Education. (2005). *The European Higher Education Area – Achieving the Goals*. Bergen 19-20 May.
- Bologna Declaration. (1999). *Joint declaration of the European Ministers of Education*. http://www.bologna-bergen2005.no/Docs/00-Main_doc/990719BOLOGNA_DECLARATION.PDF
- Commission of the European Communities. (2000). Communication from the Commission to the Council, the European Parliament, the Economic and Social committee and the committee of the regions, *Toward a European research area*. COM (2000) 6 final. http://europa.eu.int/eur-lex/lex/LexUriServ/site/en/com/2000/com2000_0006en01.pdf

- Commission of the European Communities. (2002). Communication from the Commission, *More Research for Europe, Towards 3% of GDP*, COM (2002) 499 final, Brussels. http://europa.eu.int/eur-lex/lex/LexUriServ/site/en/com/2002/com2002_0499en01.pdf
- Commission of the European Communities — Communication from the commission. (2003). *The role of universities in the Europe of knowledge*. http://europa.eu.int/eur-lex/lex/LexUriServ/site/en/com/2003/com2003_0058en01.pdf
- Commission of the European Communities. (2005a). Communication to the spring European council, *Working together for growth and jobs, a new start for the Lisbon Strategy*, COM (2005) 24, Brussels.
- Commission of the European Communities. (2005b). Communication from the commission, *Mobilising the brainpower of Europe: enabling universities to make their full contribution to the Lisbon strategy*. COM (2005) 152 final.
- Commission of the European Communities. (2005c). *Proposal for a decision of the European parliament and of the council concerning the seventh framework programme of the European community for research, technological development and demonstration activities (2007-2013)*. COM (2005) 119 final, Brussels.
- Commission staff working paper. (2005a). *Annex to the Communication from the commission: Mobilising the brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy, European Higher Education in a Worldwide Perspective*. SEC (2005) 518, Brussels. http://europa.eu.int/comm/education/policies/2010/doc/workuniversity2005_en.pdf
- Commission staff working paper. (2005b). *Simplification in the 7th Framework Programme*. SEC (2005) 431. http://europa.eu.int/comm/research/future/pdf/ec_2005_0431_1_en.pdf
- Directorate General Research. (2004). *The Europe of Knowledge 2020: a Vision of University-Based Research and Innovation; Conference proceedings*. European Commission, Brussels.
- Europe (the) of Knowledge 2020. (2004). *A vision for University based Research and Innovation*. Liège, April 2004. http://europa.eu.int/comm/research/conferences/2004/univ/index_en.html
- Forum on University-based Research. (2005). *European Universities: enhancing Europe's Research Base*. European Commission, DG for Research Science and Society, Brussels.
- Kok, W. (2004). Report from the High Level Group chaired by Wim Kok, *Facing the Challenge, The Lisbon strategy for growth and employment*. Brussels. http://europa.eu.int/growthandjobs/pdf/kok_report_en.pdf
- Lisbon European Council. (2000). *Presidency conclusions*. 23-24 March. http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/ec/00100-r1.en0.htm
- Mora, J. G. (2005). "Mobilising funding for increased investment", Conference *Enabling European Higher education to make its full contribution to the knowledge economy and society*. Brussels, 10 February. http://europa.eu.int/comm/education/policies/2010/doc/conference2005/workshop_1_jose-gines-mora_paper.pdf
- Morgan, A. W. (2005). "Funding University Research in the USA at National and State Levels", contribution at the *4th Symposium of the Russian Higher Education Program*. Salzburg Seminar, 9-13 April.

- OECD. (2005a). *Economic policy reforms, growing for growth*, press conference, London, 1 March 2005.
- OECD. (2005b). *Economic policy reforms, going for Growth, Structural Policy Indicators and Priorities in OECD Countries*. OECD, Paris.
- Reichert, S. & Tauch, Ch. (2005). *Trends IV: European Universities Implementing Bologna*. European University Association, Brussels.
- Sapir, A. (2003). Report of an Independent High-Level Study Group established on the initiative of the European commission, *An agenda for a growing Europe, Making the EU economic system Deliver*, Brussels. <http://www.euractiv.com/ndbtext/innovation/sapirreport.pdf>
- Sorbonne Joint Declaration. (1998). *Joint declaration on harmonization of the architecture of the European higher education system*. http://www.bologna-bergen2005.no/Docs/00-Main_doc/980525SORBONNE_DECLARATION.PDF
- Van Vught, F. A. (2004). "Closing the European Knowledge Gap? Challenges for the European Universities of the 21st Century", in Weber & Duderstadt (eds), *Reinventing the Research University*, Economica, Paris, pp. 89-106.
- Weber, L. & Zgaga, P. (2004). "Reinventing the European Higher Education and Research sector: The Challenge for Research Universities", in Weber & Duderstadt (eds), *Reinventing the Research University*, Economica, Paris, pp 29-49.