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- to facilitate a wider dissemination of practical management methods and approaches.

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The Management of Change in Higher Education

by

Sir Howard Newby
HEFCE, United Kingdom

Abstract. This paper is the text of the opening speech which the author delivered at the 2002 IMHE General Conference on the theme of “Incentives and Accountability: Instruments of Change in Higher Education” which was held at OECD headquarters in Paris on 16-18 September 2002.
The changing role of higher education

I need to say at the outset that although in my speech I shall be referring to the UK Government, it is important to bear in mind that the funding council which I lead is the Higher Education Funding Council for England. We have a devolved system of government in the United Kingdom, and, although there are many similarities, colleagues in Scotland and Wales would not be at all happy if you thought I was speaking for them. Also if I refer to universities, please take that as a shorthand term for higher education, which in England is delivered by 77 universities, 55 colleges of higher education and specialist institutions and more than 200 further education colleges.

I would like to begin by looking at the changing role of higher education in the modern world. These changes are based on the very different expectations of governments, society, students and staff from a few decades ago. I want to consider the implications of these changes for leadership, governance and management in our universities and colleges. We will also explore how government and, in the case of the United Kingdom, funding bodies can best support the process of change without distorting the key purposes of higher education, undermining the autonomy of institutions and placing intolerable burdens on universities and colleges.

Firstly, throughout the world the higher education agenda is far broader than ever before placing greater responsibilities and choices on higher education leaders. True teaching and research remain core activities, but their nature and methods of delivery are changing in response to the needs of students, employers and the users and sponsors of research. There is far greater emphasis now on knowledge transfer. This is leading to the recognition by governments of the role of higher education in regional regeneration and development. Strengthening links with business and the community now sits alongside teaching and research as a mainstream activity which needs funding support.

If you want a fuller exposition of the higher education agenda, it would be difficult to improve on the key themes developed by Lord Dearing, whose committee reviewed the future higher education in the United Kingdom six years ago. I have listed here the major roles of higher education institutions in the 21st century that were set out in the Dearing Report:

- Lifelong learning.
- Creation of a learning society.
Regional economic development.
Pure research and scholarship.
Technological innovation.
Social cohesion.
Public accountability.

These are my terms, and not those of the Dearing Committee, but I think they set out the present and future higher education agenda very well. They are the topics with which higher education leaders are having to grapple, and, to assess the development of priorities in HE, it would be worthwhile comparing them with the agenda of 30 years ago.

If you asked most people connected with higher education to describe the most significant changes over this period, they would probably describe the movement from an elite to a mass system of higher education. The change they would describe would largely be in terms of increasing student numbers. What we need to remain focused on is the significant development of the HE agenda, articulated by Dearing to maintain a reality check on implications and scope of managing the higher education enterprise today. As we have seen this goes far beyond the important task of recruiting and providing for an increasing number of students.

Meeting changing expectations

Why has higher education been transformed in this way? I think what we have seen over the past 30 years is the increasing realisation and articulation of the central role of higher education in creating and supporting a modern economy, and benefiting society in a wide variety of ways. We have moved from an elite system 30 years ago, when relatively high levels of expenditure were tolerated in the United Kingdom because with the participation of less than 14% of young people under 21, student numbers were comparatively small. During the 1980s and 1990s higher education continued to grow. The jury was still out, however, on its underlying benefits and value, and much of the expansion was funded through so-called “efficiency gains”. The case for more investment had still to be accepted. The main political parties were not sufficiently confident that higher education would win many votes and agreed to take it off the political agenda in 1996 before a general election, while the Dearing Committee explored the problems and suggested remedies for prolonged, chronic under-investment.

Since Dearing reported the jury has returned. Higher education as Donald Johnston pointed out is now widely seen as a principal driver of the modern global knowledge economy. From a United Kingdom perspective the Government’s Competitiveness White Paper in 1998 set out the global ambitions
of the UK Government and underlined the importance of universities in creating a dynamic economy through education, training, and research. There was a recognition – which today seems self-evident – that the knowledge and skills of people were critical to the success of British business. Knowledge creation, transfer and use were seen to be at the heart of everything we do. They are regarded as the building blocks of national prosperity. Because of this recognition, higher education institutions not just in the United Kingdom, but across the world, are regarded as important instruments of economic and social change.

Taking an even broader view than the Competitiveness White Paper, the benefits of higher education are increasingly seen as providing civilising and cultural values and delivering social goods. Research in many countries has consistently shown a return to earnings from higher education across different social groups. These are often referred to as “private goods”. But now there is a growing evidence of a wider range of social benefits, such as increased social cohesion and indirect benefits to the macro-economy, by, for example, reducing the costs of social security and criminal justice systems. Research sponsored by the Smith Institute and the HEFCE, carried out by John Brynner and Muriel Egerton at the Institute of Education, University of London, identifies a range of wider benefits, including better health, parenting, civic engagement, and more egalitarian attitudes among graduates.

Growing recognition by Governments of these wide range of benefits has put higher education on a different footing than in the past and is bringing it increasingly into the political spotlight. Higher education is being taken much more seriously. This is beginning to have an impact on funding. There is a growing recognition that if the United Kingdom is to remain globally competitive, universities and colleges need to be properly resourced. In the United Kingdom we have largely arrested the decline in unit funding of the past 25 years, but are still grappling with the question of how to find the additional funding needed to meet the costs of the growing higher education future agenda and rectify past under-investment – particularly in staff, buildings and equipment. The answer partly rests on finding the right balance of public and private funding, and settling the question of student fees and financial support, which was first addressed by Dearing. The UK Government is to publish a Strategy Paper on these matters later this Autumn.

For the higher education leader this recognition by Government of the benefits of higher education will be welcome. They may, however, regard the consequences as something of a mixed blessing. Most of the additional funding will still have to come from the public purse and that extra money is likely to have strings attached – or as a previous Education Secretary put it there will be a requirement of “something for something”. In short, because of the recognition through extra investment of the important role being played
One of the manifestations of this additional government interest, which is having a significant impact on higher education leaders and the institutions they run, covers the question of delivering improvements in increasing and widening participation. To give you an indication of the level of political interest in this question, in my first year as Chief Executive at the HEFCE I have given evidence on two occasions to MPs sitting on the powerful Public Accounts Committee examining the issues of widening participation and student retention and success. I would not wish to give the impression that universities, supported by the HEFCE, have been reluctant in following the Government’s lead, because, for a long time, we have worked together on developing and delivering policies to bring the benefits of higher education to as wide a group of students as possible, while maintaining quality and standards. The difference now is that the interest of Government has become a political imperative underpinned with performance indicators and targets. There is now an election manifesto commitment to enable 50% of 18-30 year olds to benefit from higher education by 2010. I should emphasise here that we are not just talking about increasing participation, but also about widening participation with universities and colleges required to set fair access targets to broaden recruitment of students from poorer communities and non-traditional backgrounds.

For higher education leaders and managers the question of widening participation has now moved to the top of the higher education agenda. I have been struck in my visits to universities and colleges in England by the extent to which universities and colleges have recognised the importance of this commitment. Widening participation is seen as crucial in raising aspirations, creating opportunities for individuals, and providing social and economic benefits to society. All universities and colleges have strategies to address the question of social inclusion. For some this will mean ensuring they are doing all they can to recruit and retain students from wider backgrounds, while for other it provides the opportunity for considering a real step change in growth of funded student numbers.

At HEFCE we have taken the widening participation agenda forward under the Partnerships for Progression initiative in collaboration with the Learning and Skills Council, who are responsible for funding post 16 further education and training, and the Department for Education and Skills. We have also provided funding to support institutions’ widening participation strategies. This has encouraged a new approach to managing relationships and regional networks as universities are now working closely with schools, further education colleges, employers and regional agencies. They are laying
firm foundations on a regional and sub-regional basis to increase participation and promote fairer access to wider groups of non-traditional students.

As a result of these initiatives over the past few months much effort has been devoted to thinking through the issues of demand for higher education. The 50% target in England is a tough challenge, but we do believe it is achievable. The current initial entry rate is 41.5%, so we need an improvement of 1% each year between now and 2010. But increasingly we have also been thinking about the supply side. We estimate that the Government’s targets would mean about 350,000 additional full-time equivalent students enrolled by 2010. Many of these would be the new types of students from non-traditional backgrounds that we are looking to recruit through the widening participation initiatives. The growth represents about a 35% increase on current numbers. If we preserve existing staff: student ratios, this would involve an additional 17,000 academic staff as well.

That gives you some idea of the scale of the expansion we are talking about, which will need to be fully funded. We know from research we commissioned that it costs institutions up to 35% more than the GBP 4,600 (EUR 7,265) standard funding per student to recruit and support students from non-traditional backgrounds. The implications for institutional management are considerable, because this represents the largest expansion of higher education in England since the Robbins Report in the 1960’s. It is clear that this scale of expansion cannot be achieved in a laissez-faire manner. We will have to take a rather more planned approach, which will require considerable consultation with the sector. We also need a great deal of planning certainty from the Government, through successive spending reviews.

Discussion about growth in student numbers raises big questions about the characteristics of the types of students who will enter higher education over the coming years and the type of higher education that they will be looking for. The OECD/IMHE project on management responses to student expectations identified students as consumers or “stakeholders” and outlines the services and quality of experience they will be seeking.

Students today have much higher expectations of the quality and professionalism in the provision of university amenities and services; of access to suitably qualified teachers and learning support; of the value of their study to their careers; of convenience in delivery in higher education; of being treated with respect; of value for money; and of high academic standards. Many are engaged in paid employment or have other external demands on their time, and may be looking for 24/7 access to services. Use of technology is beginning to reshape our ideas about time and place in higher education and is blurring distinctions between on-campus and distance learning. It is important as the OECD project recognises that policy makers, funding bodies
and HE leaders throughout the world should plan the future growth of HE with much better knowledge-base and understanding of student needs and expectations. This project is important in leading to that better shared understanding.

The response by universities and colleges

The changing expectations of students, governments, local and regional communities, employers and the professions are all making increasingly complex demands on higher education leaders. Different organisations, groups and individuals all feel that they have a legitimate claim on influencing the activities and priorities of higher education. We now need to ask the question about what the university's response should be to this increasingly complex set of demands. I think there are two main responses. Firstly, universities need to be much more customer focused in everything they do, but secondly, as autonomous institutions, they need to set their own agendas and plan their own destinies.

In terms of setting their own agendas it is essential that universities do not lose sight of their fundamental purposes of advancing knowledge and instigating a spirit of critical enquiry. We need to remind ourselves that higher education is not simply a means to an end, but is an end in itself. We need to continue to celebrate the purposes of higher education in terms of the enlightenment it brings in spreading civilised values and promoting social progress. Universities are important institutions which lie between the individual and the state. We should not forget that they have a key role in our communities and regions in inculcating civic values in our students.

But also in terms of being in charge of their own destinies universities are beginning to realise that they cannot do everything and chase every funding initiative. The agenda we discussed earlier in relation to the Dearing enquiry places higher education in a dilemma. We would not wish to deny the importance of any of the components of the agenda, but we all need to face up to the fact that no institution – not even the largest and best endowed – is funded sufficiently to pursue all these activities simultaneously at global levels of excellence. If one accepts that view – and I think it is inescapable – we then have to proceed logically to the notion that institutions must seek out their comparative advantage and build on their strengths rather than trying to do everything.

The role of the HEFCE

I would now like to outline what we are doing at HEFCE to address this problem. In explaining our position I have been asked to define our role. Put at its simplest we distribute public money – more than five billion pounds
in 2002-03 (EUR 7.9 billion) – for teaching and research to universities and colleges. We also advise government on the funding needs of higher education. In doing so, we aim to promote high quality education and research, within a financially healthy sector and strengthen the links between higher education and business and the wider the community. We also play a key role in ensuring accountability and promoting good practice.

The important feature about the Council from the universities’ perspective is not so much what we do, but how we do it. We have a long tradition of working in partnership with the higher education sector, working closely with institutions, trying to understand their needs and consulting on all the main policy issues. We also act as a buffer against political involvement in decisions on funding allocations to universities which might involve issues of academic autonomy.

In assessing the role of the Council we might ask the question “Why don’t universities currently concentrate on their areas of strength?” One answer is that they do, but the current funding arrangements may not encourage them to do so sufficiently. A key issue for the Council is how far we can re-engineer our funding model to encourage rather than discourage a greater diversity of mission within the sector.

One of the problems we face – in common with other countries – is that research is widely regarded as the most powerful driver of reputation and risks distorting institutional behaviour. If we could develop comparable systems of recognition and reward for excellence in other priority areas, we might be able to secure more effectively the range of outcomes from higher education which the nation wants.

Let me emphasise here that we have no top-down plan. We have to strike a balance between offering some steering and guidance to the sector on the one hand, and respecting institutional autonomy on the other. So what we envisage is not some sort of “big bang”, but rather an evolutionary approach in migrating towards an increasing diversity of mission.

This is where the challenge is presented to the institutional leader. We have no intention of imposing missions, or assigning institutions to categories. The initiative must remain with institutions to determine which activities they want to concentrate on. Our role is to offer funding incentives to encourage a diversity of mission – possibly including funding institutions for a step change in their activities.

We are currently doing this through a widespread consultation with the sector and other stakeholders. The first stage has been aimed at developing a long term vision of higher education, based on a number of strategic themes. We will feed the results into a draft strategic plan for the Council for the years 2003-08, which again we shall consult on widely. The final plan will
provide a directive based on a shared view of the years ahead. It will also provide a framework in which universities and colleges can plan their own future activities.

Through the consultations so far we have identified the following areas as the major strategic themes for our plan. They are if you like the chapter headings:

- Increasing and widening participation.
- Enhancing excellence in teaching and learning.
- Enhancing research excellence.
- Closer links between higher education, business and communities.
- Securing diversity of mission.
- Effective leadership, governance and management.
- Finally the organisational development of the funding council itself.

It is the effective leadership governance and management aspects of our strategic thinking that I want to turn to now.

**Implications for leadership, management and governance**

As we have seen as a higher education sector we face formidable challenges over the next decade. Meeting these challenges will require the highest calibre of leaders and managers who are prepared to embrace change through developing management practices and raising the level of strategic thinking within their institutions.

I think that it is very important that we should talk about investing further in the professional development of managers and leaders at all levels within institutions, but we should not talk ourselves into a position where we become unnecessarily gloomy about what we have already achieved. In many countries higher education has gained some notable successes and we have much to learn from each other.

In the United Kingdom, for example, over the last 15 years the student participation rate in higher education has more than doubled and yet the sector has absorbed a cost reduction of nearly 40%. This expansion has been achieved without a significant loss of quality and with only a tiny reduction in our graduation rate, which is still among the highest in the world. We have a very high rate of employability among graduates achieved without any decline in the premium of lifetime earnings, and as a country we are attracting a growing share of international students. We punch well above our weight in terms of delivering international research and have achieved considerable progress in strengthening links with business and promoting innovation through, for example, start-up companies, science parks and incubators.
Higher education is already in many respects at the heart of local economic regeneration.

I make these comments not to boast about the success of the United Kingdom, because many countries could point to similar achievements. I do so to make the point that these results testify to a record of good management, and we already start from a high base. But given the challenges that lie ahead, we know there is no room for complacency and plenty of room for improvement.

We are living and working through a period of unprecedented change. All that we can be certain of is that the pace of change will continue and probably accelerate in the future. We no longer have the luxury – if we ever did – of thinking that if we can get through this period of turbulence one day we will get all back to normal. The only thing that will not change in the future is change itself. The leaders and managers of today need to be able to manage change and adapt to change in order to meet the challenges of tomorrow. This will require continuous and sustained investment in lifelong learning and professional updating of all those with management responsibilities.

In order to meet these challenges we at HEFCE, working with universities and colleges, and our other partners in Government and elsewhere, need to develop our strategic thinking so that we can make sensible decisions on where and how to allocate resources on a medium and long term basis. As I have mentioned we at HEFCE have developed a new approach to developing our own five-year strategic plan. We wish to reach a greater level of understanding among our stakeholders of what we are seeking to achieve as a sector in meeting the expectations and needs of society. We will continue to work closely with the institutions in helping them to achieve their own goals within this overall broad and shared strategic framework.

In facing up to these challenges we still need as a sector to invest more in supporting the institution’s own efforts in management, leadership and governance. We need to be able to sustain world class quality on the basis of the resources we already have. Looking forward the challenge intensifies in the face of Government targets in relation to widening participation, excellence in learning and teaching, research and knowledge transfer and strengthening links with business and the wider community. We all recognise that meeting these challenges will take more resources, but they will also require changes in the way we conduct our business.

Because of increasing international competition everything we do has to be approached in terms of global levels of excellence. Research is already effectively globalised and learning and teaching are becoming increasingly so. Meeting these standards above all requires excellence in leadership, management and governance practices.
We stand at the threshold of what could be a very invigorating time for higher education. As I said at the HEFCE annual conference in April, we live on the cusp either of facing an exciting period of expansion in which innovation will flourish – or suffering what has been described as the crumbling edge of quality, if the additional resources do not materialise.

So where do we stand as a higher education sector in the United Kingdom in terms of enhancing the leadership and management capacity required to deliver the high quality services that will be required in the years ahead? Universities UK (UUK) have developed a Top Management Programme, which has now been running for three years, and gaining positive feedback from those who have been on the courses. We have also developed a mentoring scheme in which 40 or so heads of universities and colleges have the opportunity of mentoring or job shadowing with leading managers from other parts of the economy. The Government has established a National College for Excellence in Leadership for managers in the post 16 sector further education colleges, which will enable us to explore common elements of value to both the HE and FE sectors.

Among the current developments UUK and the Standing Conference of Principals – representing the colleges of higher education – are working with urgency on developing a strategic framework for deploying further investment in the professional development of managers in each institution.

We at HEFCE and an increasing number of universities and colleges have set ourselves a rigorous international benchmark in achieving excellence. We have completed our first self-assessment against the European Foundation for Quality Management Excellence Model, and aim to be among the top 20% of United Kingdom public sector organisations as measured by the Excellence Model, by 2004.

In terms of improving management practices in the sector, we have a Good Management Programme in which we have invested GBP 7.5 million (EUR 12 million) in 49 projects. The programme is focused on driving innovative practice, identifying solutions and disseminating the outcomes. The sector has chosen the topics on the basis of peer reviewing the bids received. The institutions involved in the individual projects have provided matched funding.

The programme has been a big success and has attracted much international attention. The sector has invested considerable time, effort and resources in developing bids and conducting the projects, which are largely pursued on a collaborative basis. Each of the two rounds of bidding has been heavily oversubscribed indicating considerable interest by the sector. One of the impressive features has been the extent to which the projects have taken
account of the diversity of the sector, recognising that one size will not fit all and off the shelf solutions are usually inappropriate in higher education.

We are committed to investing more money in this programme in the future. I am convinced that it will more than cover its costs in terms of increasing cost efficiency, improving services and developing the effectiveness of people in different areas of management.

The theme of this conference is incentives and accountability – or as I have heard it described carrot and stick. In providing incentives and requiring accountability it is essential that we as a funding body go with the grain of and build on good practice wherever it is found in the sector.

We aim to support institutions in developing good practice through advice, guidance and targeted funding.

A key issue in the United Kingdom as in other countries is how to recruit and retain high quality staff. In 2001-02 we allocated GBP 80 million (EUR 126 million) – from a total of GBP 330 million (EUR 520 million) over three years – to help institutions modernise their processes for managing people, and specifically to assist in the recruitment and retention of staff. Funds were allocated to all universities and colleges once they had submitted human resource strategies and action plans with specific objectives to improve outcomes and processes.

Most institutions submitted emerging strategies in 2001, which we expect will be converted into full strategies this year. To help them we have published a guide with case studies of existing good practice focusing on six priority areas: recruitment and retention, staff development and training, equal opportunities, reviews of staffing needs, annual performance reviews, and action to tackle poor performance. This was backed up by seminars, and specialist help from consultants in human resource management.

Turning towards accountability there are now dual and often conflicting pressures at work. Requirements for greater accountability need to be balanced by a proper concern to reduce the burden of accountability on institutions. Events such as Enron and Worldcom have moved corporate governance up the political agenda. In the United Kingdom, the momentum for improved corporate governance in all sectors, including far better auditing and risk management arrangements is now very strong. The momentum is very evident in the HE sector.

In the United Kingdom those involved in corporate governance, risk management and audit work have taken a number of initiatives to promote and maintain good practice. The Conference of Chairman of university governing bodies has taken the lead in translating the principles of good governance set out by a government committee on standards in public life into good practice guidance for universities and colleges. At HEFCE we have
worked closely with directors of finance and others in the HE sector to promote the adoption of risk management and statements of internal control.

When we are talking about accountability I need to declare an interest because I act as the accounting officer for more than GBP5 billion (EUR 7.9 billion) of public funds distributed to universities and colleges by HEFCE. I am personally accountable for these funds. In other words I have to account for the use of these funds: not just publish a set of audited financial statements. I will also be held accountable – by the DfES, the minister, the National Audit Office and the Public Accounts Committee for any waste, irregularity or impropriety in connection with these funds.

Is this reasonable? Can any sensible arrangements be fashioned that will enable me to be confident that this huge amount of money being spent in 130 higher education institutions and over 200 further education colleges is being subject to effective stewardship? I think that such assurances can be given without an army of auditors imposing heavy burdens on institutions so long as everybody plays their part. There is no evidence that the HE sector as a whole is particularly prone to financial or management failures, or failures to deliver on academic performance.

At HEFCE we are moving to a position where our small team of auditors make less routine visits to institutions, releasing time for them to promote high standards of auditing, reporting and risk management. Effective risk management will become much more of a priority. Our auditors will make better use of financial and monitoring information already submitted by institutions for other purposes and seek to rely more on their own independent audit arrangements. This will provide a constantly updated risk assessment for each institution, while reducing the administrative burden.

Through our Better Accountability through Partnership initiative we aim to ensure that the information and processes required for institutions' own good management and governance can also meet the interests of external stakeholders, so cutting down duplicated effort. While recognising more needs to be done through better co-ordination and working more closely with our partners, we have made significant improvements in reducing the burden on institutions through streamlining the bidding processes, simplifying the collection of data from institutions, and introducing a new quality assurance regime.

**Looking to the future**

I would like to end by taking a look at the future. Our aim as a funding council will be to provide active support to a broad-based partnership with the sector in developing leadership, management and governance capacity and capability across and within all universities and colleges. We will pay
particular attention, at all levels, to the investment and management of human resources of institutions, assisting them with recruitment and retention and modernising HR management systems.

We will also continue to work with many national and international partners encouraging collaboration wherever it brings mutual benefits. Representatives of many UK organisations, heads of UK universities and other senior staff have worked with us to develop activities with several countries including China, Brazil, India, Japan, Thailand, South Africa and Indonesia. Future work with China, Japan and Thailand will focus on HE leadership and management.

We have also set up a joint OECD – IMHE project on international higher education financial management. As governments are placing increasing importance on HE to deliver important economic and social outcomes, we are keen to share knowledge on financial governance, management and monitoring. The project will produce a set of national studies and an international synthesis report which will enable countries to learn from each other’s experience in order to enhance the effectiveness of institutional financial governance and management.

Finally and rather intriguingly I should like to raise the question of whether we should set up an international academy for university management. This is something the HEFCE Board has discussed and will be returning to, but so far we have not reached any firm conclusions. I think that there is general agreement that in today’s challenging climate, HE managers need the opportunity to step back from day to day business, explore new ideas, learn from both national and international experience, and use the best techniques, tools and resources.

An international academy would offer a broad range of services, including short courses, award bearing courses, benchmarking projects, mentoring and shadowing schemes, seminars, study tours and advisory services. We shall explore with our partners whether there is a demand; and possibly the development of such a venture will become the subject of a future IMHE conference.
Incentives and Accountability: Instruments of Change in Higher Education*

by

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Abstract. Observers have frequently pointed to a lack of openness in French universities and university institutions, but I may say that for several years now French universities, and more generally the entire higher education system in France, have been engaged in efforts to make the process more open in all respects.

The institutions of French higher education are moving towards increasing autonomy. I shall seek, in this article, to show that the French system is equipped with a number of incentive mechanisms. These are both collective, institutions having the opportunity to generate their own resources, and also individual, taking the form of personal bonuses. In the same way, universities are subject to much more frequent monitoring than is thought, which could lead to elements of a system of evaluation. But the oversight that the French Government has over public higher education and research institutions is both excessive and inadequate: it is finicky and poorly targeted and therefore badly organised and ineffective from the point of view of meeting society’s legitimate expectations. The idea I should like to promote is in fact quite simple: it is by making institutions more accountable by actually increasing their autonomy that we shall promote incentive systems both for individuals and for institutions and that we shall impose an effective method of evaluation – the only ways of ensuring real change at the heart of our system of higher education and research. Incentive systems are needed to motivate people, institutions need increased autonomy if their action is to be more effective and a real system of evaluation is needed to ensure management and decision-making accountability for partners and to assess the ability of institutions to achieve the strategic objectives they have set themselves.

* Keynote speech which the author delivered at the IMHE General Conference, Paris, 16-18 September 2002.
Ladies and gentlemen, I want first of all to express my gratitude and thanks to the managers of the OECD programme for inviting me here to speak as a French university administrator. Observers have frequently pointed to a lack of openness in French universities and university institutions, but I may say that for several years now French universities, and more generally the entire higher education system in France, have been engaged in efforts to make the process more open in all respects, in terms of reforms in the offer of education, new target audiences, new partners, professionalisation, internationalisation, greater use of research, transfers of technology from research laboratories to industry and business.

This new openness reflects an awareness of two essential factors on the part of institutions and the universities themselves: the special role that universities play, and must play, in order to position our country to greater advantage in the process of building Europe, and more generally in the globalisation of economies and societies, from both the scientific and the educational viewpoint, and in the second place the discovery by universities and academics of the key role that they must play in the economic and social development of our own country and its regions, including the creation of employment opportunities through scientific research activities. At the same time, for the last decade our universities have benefited from a very activist and determined development policy, under the leadership of senior officials including, of course, Claude Allègre.

French higher education has managed to escape the traditional Jacobin straitjacket, with its centralising tendencies, and to give its institutions increasing autonomy, with all this means in terms of evaluation and competition, both internally and externally. Our system is still in mid-course and has a long road ahead of it. To refuse to go down that road would be to sign a death warrant for the system as a player in the scientific, economic and social development of our society, and would condemn our country to a state of chronic uncompetitiveness, in cultural and scientific as well as in economic and social terms.

I want to use this occasion to explain this new state of affairs and to describe some of the changes we are striving for. Before going to the heart of my subject I would first like to make two preliminary remarks. The first strikes me as necessary because of the very particular situation we have in France,
with the coexistence of universities and of schools, some of which, and only some of which, are outside the universities and even outside the national education system. Because these schools are largely defined and governed by a system of legislation and regulations equivalent to that covering the universities, I believe that much of my presentation and my analysis will apply just as well to the school system. By that, I mean that in terms of the theme of this 16th Conference, “incentives and accountability: instruments of change in higher education”, it would be a mistake to focus exclusively on the universities on one hand and to treat the schools separately on the other. These schools are often located within the universities, as small institutions with a highly select and therefore very homogeneous student body. They are in fact more open to the professional world than are the universities, on the whole. Because of this they are more responsive and more adaptable than the universities. But the problems of incentives, of accountability in management and in decision-making apply there in very much the same way. This is no doubt a point of debate among the French, but I am ready to argue in this sense. My second remark concerns the references that I have included at the end of my paper: these references are by no means exhaustive for the topic that interests us today, but they seem particularly apt in the thinking they contain on our university system. I have relied heavily on the first two references in putting together my presentation. The report of the Senior Committee for Evaluation of the Schools [Haut Comité d’Évaluation de l’École] is, as far as I know, the first attempt by that regulatory body to evaluate the universities. It points to some of the main paths that will have to be explored in the process of instituting a true system of university evaluation in France. The work by Mr. Musselin traces the changes that have been made and others to which we aspire, and indicates some of the roadblocks that we are facing.

To return to the subject of this conference, I shall focus my remarks on three areas. I shall first review the situation of French institutions as it relates to the system of incentives, by which I mean both incentives for institutions, through the strategic possibilities offered by their autonomy, and of course the incentives or system of rewards for individuals. I shall then go on to the question of the accountability of management and decision-making within these institutions. For each of these topics I shall describe briefly the current status and shall indicate the adjustments that are needed to improve the functioning of a system that is, I think, more complete than one might believe, but that is certainly far from optimal.

Lest you get the idea that there are no incentives and no accountability in the French system, I hope to make it clear that, however opaque it may seem to outside observers unfamiliar with the operating subtleties of our society, that system is in fact well equipped with incentives and means for controlling institutional management, and that these are considerably more numerous
and perhaps even more effective than is generally believed. Upon undertaking such a systematic analysis – as my work within the European University Association (EUA) has often led me to do since the Salamanca convention – one realises that the French system has many mechanisms of incentives and management control. If they were supplemented by a few meaningful measures, and above all if they were better co-ordinated, they could energise and consolidate the modernisation movement in which many institutions are now engaged. I am convinced that the French government's supervision over public institutions of higher learning and research is both too heavy and too light: it is fragmentated and poorly targeted, and therefore badly organised and badly exercised in terms of society's legitimate expectations. This means that existing incentive instruments and mechanisms for evaluating management and decision-making are ineffective and little used. Above all, the idea that these mechanisms should be strengthened has been discouraged by a somewhat hypocritical argument to the effect that everything should be left to decision by the all-powerful government, which is supposed to act in the public interest. Yet the government does not have an adequate capacity for evaluation and information, and it is therefore unable to institute proper incentives whereby a higher education system, even a public one, can be managed efficiently in a centralised way.

In the end, the idea that I want to propose is quite simple: only by empowering institutions through strengthening their autonomy can we promote an incentives systems in France that will work both for individuals and for institutions and that will lead to truly effective evaluations which, in turn, are the only means of bringing about real change at the heart of our higher education and research system. We need incentives to motivate people, we need greater autonomy for institutions so that they can function more effectively, and we need a real system of evaluation to guarantee to our partners that there is accountability in management and in decision-making, and to appreciate institutions' capacity to meet the strategic objectives expected of them.

Incentives and the strategic behaviour of universities

We may speak of incentives in terms of an institution, even if that term is normally reserved to mechanisms that apply to individuals. Yet incentives that are applied collectively to an institution make sense only if that institution is able to make strategic choices. This means that it must have some minimum capacity to plan for its future in strategic terms, and for that it must have real autonomy. We often hear that French universities do not have that capacity, subject as they are to government interference at all levels of their activities and the imposition of government directives that leave the institutions as nothing more than passive executors. Yet this view is seriously
mistaken and contradictory, since in the way it really operates the system is much more decentralised than would appear, and it is becoming increasingly more decentralised.

The autonomy of French universities is solidly entrenched in a formal sense. It is enshrined in the 1984 law governing the legal organisation of institutions of higher learning, and many regulations are based on that autonomy. The great majority of operational funding for universities, especially for paying salaries, comes from the government, as does most of the investment funding, although local governments at the city, departmental and regional levels have recently been contributing on this score. Because of this, it is often suggested that the universities have no real autonomy vis-à-vis the supervisory authorities. The reality, however, is rather more subtle. First of all, it is true that any institution runs the risk of being politically dependent on the bodies that finance it. Even in systems where universities manage all their resources, the search for external funds necessarily puts political autonomy at risk. To think that French universities have no political autonomy because they are public institutions under the direct supervision of the government would be, first, to ignore the fact that, in France, the government always operates with a view to “public service”, which in the case of higher education means ensuring that citizens have equitable access to education and that educational opportunities are reasonably distributed throughout the country. Of course, we may argue over whether “public service” can really be identified with the public interest, but that is nevertheless the doctrine: public service, public interest. We must not forget that in France the public services are still of very high quality, compared to those in many countries at a similar level of development. Government oversight does certainly not mean lack of political autonomy for institutions. Indeed, at every level of responsibility (president, dean, department head, presidents of specialised commissions, recruitment officers) elections are the rule in the French university system, something that is not the case in every member country of the European Union, for example. This method of appointment naturally conveys a degree of autonomy to institutions, which have broad powers to appoint their leaders at all levels (recognising however that this is not true for the schools, where the directors are appointed by ministerial decision). Institutions have complete autonomy in terms of their educational and scientific pursuits, and partial autonomy when it comes to their internal organisation.

The need of ministerial authorisation for awarding a national diploma is frequently cited as another sign of the universities’ lack of autonomy. Yet in fact this authorisation is a mechanism for scientific and pedagogical control, as the basis for a labelling system. We are certainly far from a system of quality assurance or accreditation, but I think that national authorisation could be transformed into a quality assurance system and, at least for some
professional degrees, it could lead to true accreditation. This is more a question of redefining methodology and practices in the authorisation process, rather than of any inherent problems with the idea of a national diploma. In the case of engineering studies, we must also look at the role played by the Engineering Qualifications Commission (CTI): although it does not approve the award of a national diploma it serves as a quality evaluation body, and its seal of approval is worth just as much as the accreditations that may be provided elsewhere. When it comes to national diplomas, the initiative always lies with the institution, which is free to request the authorisations it wants and to make use of them or not as it sees fit, depending on its resources and on the context in terms of student demand or the teaching organisation that it can put together. These authorisations are often granted only to remain a dead letter because the institutions that have sought them have preferred not to start issuing the diplomas in question.

Finally, we must remember, when it comes to diplomas, that the universities can award doctoral degrees that have the status of national diplomas without the requirement for ministerial authorisation. All the university needs is to have professors on staff in a given discipline in order to conduct thesis examinations in that discipline. This is of course only a necessary and not a sufficient condition. It is the university's president who authorises registration and thesis examinations for doctoral students, without any need for the oversight authorities to countersign, but this can be done only after external advisers have assessed the student's thesis project from a scientific viewpoint. At the highest level of scientific degrees, then, French universities enjoy complete autonomy, something that again is not necessarily the case in universities elsewhere in Europe or abroad.

In short, within the French system, where universities are publicly financed and there is a public monopoly on the awarding of national degrees and diplomas, the universities would have no autonomy at all if the initiative rested with the government. Fortunately, this is not the case, and it is in fact the universities that have the initiative. This does not give them sufficient operating autonomy, but their political autonomy is complete. Resources, in terms of staffing and direct funding, are provided to institutions by the State on the basis of criteria that take into account the number of students enrolled in the different disciplines and cycles, using an algorithm that is identical for nearly all institutions that fall under the supervision of the national Ministry of Education. In the end, we have a system that leaves the initiative to the universities, and one that does not badly in regulating itself. For example, even if a university requests authorisation for a national diploma and obtains that authorisation because it has prepared a good case from the scientific and pedagogical viewpoints, it will be given actual funding only if it succeeds in attracting students for that diploma or if it can establish external
partnerships. In other words, if the diploma suffers from defects that escape the ministry's experts or if for some reason students holding that diploma cannot find jobs, it will attract no students and no external partners and will therefore receive very little in the way of financing.

Let us make no mistake, French students, at least at the master's level, are becoming increasingly mobile, and the “national diploma” label is no longer a sufficient lure by itself. It is the reputation of the diploma, the teaching team, the institution in which it is organised that will be increasingly taken into account by students in making their choice. Here again, as with the question of autonomy, we must not be misled by appearances. In reality, a national diploma is not a seal of approval that students can take as money in their pocket. Rather, it has become a minimum guarantee of quality, to which each institution or network of institutions will then add its own specific features, features that are the real elements on which a growing number of students base their choice. We have to accept that national diplomas are by no means all the same, and they can mask very significant differences from one institution to the next, from one university to the next. These differences are increasingly the real motivation behind students' choice – because of this the universities must now compete to attract students and this constitutes a kind of incentive mechanism for the universities.

A third point that I want to discuss has to do with contracting (contractualisation), in the form of four-year development contracts signed between the universities and the supervising ministry. Musselin (2001) quite properly sees this as the beginning of a strong movement on the part of French universities towards very broad autonomy. Every four years, each university has to prepare and negotiate a contract with the ministry. It is up to the university to take the initiative in proposing such a contract, and the government does not establish any preconditions for it. Of course, it will not approve every project submitted by every university, but it will not impose anything beyond what is proposed by the university. For the time being, only a very small proportion of university funding is provided under contract, but now that this door has been cracked we can be sure that it will be opened further. This is an original procedure that allows the institution to put forward a real strategic plan, as only an important and autonomous institution can do.

A fourth element that is too often overlooked by outsiders assessing French universities is that they have what in French law is called a “moral personality”. This means that they can enter into contracts on their own authority. It means, for example, as is the case with more and more universities, that if an institution wants to negotiate a partnership agreement with a business or a private agency, whether for supplementary funding or any other kind of support for some national diploma programme, it can negotiate a contract, ratified by the university's board of governors and signed
by the president, and that contract will have full force without any prior authorisation from the ministry. Similarly, we must note the expanded possibilities provided by the July 1999 law for marketing research results and, more generally, all the activities where universities have particular competence. A university can now organise collectively the marketing and exploitation of its scientific work, either internally, through the creation of a Service d’activité industrielles et commerciales [Industrial and Commercial Activities Office] (SAIC), which provides a real interface between conventional university activities and commercial activities conducted in the name of university, or externally, by creating an affiliate in which the university holds a majority shareholding interest. In this context, the ability of the university to commercialise its activities, under the sole authority of its board of governors, is potentially a very powerful factor of motivation.

Finally, when it comes to tuition fees, people tend to forget that fees in continuing education [formation continue] are set by each university's board of governors, again without any need for approval by the supervisory authority, and the same is true for university degrees, which any French university is free to organise, and where the university has full control over enrolment fees. Several universities have taken advantage of this possibility and are now generating significant amounts of money through professional training or international programmes.

These various features – and there are many others that I could cite – are often overlooked, and they show that the autonomy of French universities is not as formal as a cursory glance from outside might lead one to believe. What we have here are factors or incentives that motivate institutions to adopt a real strategic plan.

Of course I can already hear the comments that this somewhat idealised portrayal will invite: what are French universities missing in order to become really significant players in higher education and research? (I shall not go into the admittedly rather foolish division inherited from the so-called Faure Law of 1968, named after the then-minister in charge of universities, Edgar Faure, which left us with universities that where often too small and inadequately multidisciplinary. This is an important factor in the institutional weakness of French universities, and there is no doubt that this problem needs to be addressed in one way or the other). If the principles of autonomy and the contractual mechanisms that already exist in the French system are to provide greater motivation for our institutions, those institutions will have to become more autonomous and at the same time they will have to undertake a real strategic evaluation of their operations, their plans and their policies. In the second part of my presentation I shall go further into these questions of evaluation.
Greater autonomy can take many forms, but it is easy to imagine several measures that could expand the boundaries of autonomy that our institutions already enjoy. The measures called for by the CPU (Conférence des Présidents d’Université) are set forth fully in the proceedings of the Lille conference. I shall focus here on only two or three of them.

In the first place, there are some adjustments needed to the legal framework in which universities operate, notably to allow them to adapt their internal statutes as they see fit in light of their specific interests and their policies. At the present time, it is almost impossible for a university to amend its statutes, since such an amendment, even if left to the university’s own initiative, requires a two-thirds majority vote of all standing members of the board of governors (and not just those present or represented, which is the rule in all juridically comparable bodies). This requirement makes it very easy for a small minority to block any amendment by simply abstaining on the vote. Thus we find in many universities statutory provisions that no longer have any connection to reality, or de facto practices that have no legal foundation. Difficulties of this kind do little to generate strong incentives for or within the university. If they were released from these shackles, universities would find it easier to adapt their internal structures to the demands of their partners and their own strategic planning. They could also write into their statutes the possibility for the president to put forward real governance teams for endorsement by their boards. Currently it is not rare to find a university president surrounded by vice presidents who are his thorough opponents! Such situations arise from the method and the scheduling of elections, which are different for the president and vice presidents. Coming up with a policy line under such conditions is quite a feat. More generally, it would be well to give greater weight to the senior management teams assembled around the president and at the same time to define more clearly the respective roles of the central bodies of the university and the faculty bodies.

The Conference is also proposing that university budgets should be entirely globalised and should include operating (including payroll) costs as well as capital expenditures, as is the rule in France for most public institutions and local governments. Comprehensive budgeting of this kind would greatly expand the policy options of universities and encourage them to take a more global and strategic view of their policies. We may note that a university budget reorganisation of this kind would also make it possible to undertake more meaningful inter-university Co-operation programmes so as to put in place a systematic set of common management tools and training programmes for their managers and their administrative and technical staff, as is currently the case in the Agence de Mutualisation des Universités et des Établissements [roughly the “Agency for Inter-Institutional Co-operation”].
(AMUE). When it is the ministry that takes responsibility for developing these management tools and staff training programmes, the focus is too often on efficiency, to the neglect of the real needs of the institutions and their specific circumstances.

You will also note that I have avoided the question of tuition fees as an institutional incentive tool for the universities. This question in fact is still largely taboo in France. Yet questions are beginning to be raised: is it legitimate, for example, to keep tuition virtually free for professional studies that lead to highly paid jobs, when we recognise that those faculties most often attract the sons and daughters of high-income families? Is it legitimate to keep tuition fees low when most students in the schools and in the second and third university cycles come from the most well-to-do classes of society? In terms of the international attractiveness of the education we offer, is it proper and legitimate to point out that study costs nothing in France? This is of course a distorted version of the way things are, and it tends to give a very poor image of our education abroad. In France, we are beginning to admit that low tuition fees together with inadequate social democratisation, especially in the long courses of study, leads to a perverse system of redistribution, from the least rich to the wealthiest. We are beginning to appreciate more clearly the disadvantages of the system that prevails in France for providing assistance to organisations, in comparison to a system of providing assistance to individuals based on clear social criteria and massively upgraded scholarship grants. A system where scholarships and bursaries are much higher and are transparently allocated in accordance with social criteria would help to promote greater equality of access to education for the entire population, as well as more equitable financing of studies, where the community bears the cost for those who cannot afford it, while those who can pay for themselves are expected to do so. The public education support system would thereby gain much in terms of democratising higher education, while the educational institutions themselves would derive much more financial flexibility.

The Conference came up with detailed proposals on all these issues, and these have been made public and will be submitted to the government in the coming weeks. I believe we already have mechanisms that can encourage institutions to take further strategic and political initiatives. It is not a question of starting from scratch and attempting to overhaul the entire system of higher education in France, something that would surely kill the patient. What we need is to reinforce existing mechanisms as they relate to the institutional and legal environment of the universities, to enhance their autonomy, and at the same time to develop more transparent and more efficient instruments of individual motivation, as we shall discuss in the following sections.
Incentives and systems of individual rewards

In the same spirit, I shall now try to give you a brief tour d’horizon of the French situation as it relates to university staffing and individual incentive systems. The status of fonctionnaire d’État or public servant, which applies to teacher researchers [enseignants chercheurs], may seem incompatible with an incentive mechanism. Yet as we often find in France, there are provisions that make things a bit more flexible by allowing for certain adjustments, and these constitute components of a system of incentives for motivating staff to undertake different tasks that may be requested of them. In a very formal way, we may say that the service expected of teacher researchers in universities is characterised by two broad features. First, it is quantified solely in terms of a certain number of hours of classroom teaching, and secondly, statutory service is uniform, and the institution has no possibility of changing it, except within a very strictly defined national framework. We may add that research work is evaluated by the National Council of Universities (CNU), a national body that has the final word on the recruitment and promotion of teacher researchers. On this basis, an institution has no incentive instruments for encouraging a teacher researcher to undertake a specific mission in light of the mix of staff skills and the university’s needs.

Over the last 10 years, however, things have begun to change. In first place, responsibility for teachers’ promotions has been delegated to the institutional level: half of the promotions of professors and senior lecturers or assistant professors [maîtres de conférence] are now decided by the universities themselves, through their scientific councils or their board of governors respectively. This approach takes better account of the particular missions and responsibilities that teachers can fulfil for their institution. It represents an individual incentive mechanism available to the universities. Yet the scope of this device is limited. On one hand, the number of promotions in the hands of institutions amounts to one-half of the nationwide number of promotions as decided nationwide by the ministry, through a process that is strictly tied to government budgetary constraints, the natural fluctuations of which make it difficult for institutions to pursue a continuous and consistent policy. On the other hand, it is difficult to differentiate among teachers because promotions, even if they are decided by the institution itself, must in any case comply with a rigid points system imposed by the general status of public servants in France. There is really no possibility of making promotions more flexible. Another measure, taken at the initiative of Claude Allègre, has been to set up a bonus system that takes into account administrative responsibilities, teaching load and doctoral and research pursuits. For the first two kinds of bonus (administrative and teaching load), it is the university that decides the functions determining eligibility for the bonus, and its amount, and within the constraints of an envelope that is determined by the ministry but that the
university may choose to top-up slightly with general operating funds. (For certain functions such as president or director in some areas the bonus is automatic but the amount is set at a standard level by the ministry). All the same, this is an important step towards giving each university a system of incentives for its staff. Several complementary measures have also been taken introduced: for example, individuals can now opt for a reduction in teaching hours as an alternative to a financial bonus in certain cases. University teaching staff can now earn additional remuneration or, in certain cases, they can take their bonus in the form of a reduced teaching load, if they undertake a particular commitment on behalf of the university.

There are a number of other possibilities for supplementary remuneration. They are still theoretically controlled by the president of the university, or in some cases by the board of governors. This is the case, in particular, with activities related to continuing education, applied research contracts and advisory services to outside agencies. The July 1999 law on commercial exploitation of research allows any teacher researcher to hold an interest in, and to become a director of, a company created for the industrial and commercial exploitation of a technological innovation flowing from his or her scientific research work.

The first part of the Espéret report (2001) provides a full and detailed list of the supplementary remuneration possibilities open to university teachers. We may ask what it would take, then, for this supplementary remuneration system to be a true incentive mechanism for motivating members of the university community to exert themselves more in the service of their institution. In fact, the system suffers from a number of handicaps that prevent it from serving in this way.

First of all, and here again we shall return to the issue in the last part of our presentation, the way the pay supplements are allocated is not always entirely transparent. The rules for allocating one benefit or another are not sufficiently explicit. This is one of the weaknesses of evaluation in the French system. In the second place, the salary supplements are not generally part of the institution's planning policy. Apart from the administrative bonuses, the supplements often result from actions that are decided individually, while university authorities content themselves with ensuring that the supplements are paid in accordance with regulations. In itself, this is not necessarily a bad thing, but these pay supplements, while they may encourage individuals to take initiatives for themselves, are not really an incentive for teachers to make an effort for the university. In effect, they are a motivation for teachers to look after their own interests! A third weakness, related to the previous one, is that there is no formal link between the universities and their teachers whereby the universities can take stock periodically to ensure that their personnel are putting their skills to best use on behalf of the university.
and its policy – which is not to argue that the universities should have an exclusive interest in those skills. Finally, this system of supplementary pay is not sufficiently decentralised to the university level and so does not take into account the new missions that may appear in each university’s fields of activity. The bonuses are therefore of no help to the universities in developing their policies in new areas. Prominent among these new areas, of course, are all the aspects related to the use of information and communication technologies in teaching, as well as activities in support of industrial partnerships or even certain European programmes. We must note, for example, that it is at this time formally prohibited to include any mention of e-learning in the statutory duties of French teachers, much less to pay them for it! Similarly, the work involved in co-ordinating and implementing major scientific programmes is entirely outside the purview of the services that universities can demand of their teachers. Many institutions therefore find themselves obliged to step beyond regulatory bounds in order to accomplish tasks that they would in fact be criticised for not undertaking.

In fact, most of these problems could be remedied in a single move. That move was recommended by the CPU in its paper on autonomy, and was discussed in great detail in the report prepared by E. Espéret. What is needed is to move to a contractual footing or, if the word “contract” arouses suspicions in light of the status of public servants, to a convention or written agreement between each teacher researcher and his or her university. Of course the universities already have fairly broad control over staff recruitment, subject to verification of scientific credentials by the CNU or, for certain disciplines, by an examining panel (jury d’agrégation). But no university has the power to use a contractual arrangement to amend the services demanded of its staff, although such an approach could provide greater incentive to teachers themselves and would also place their skills and their aspirations truly at the service of the university. Such a contractual relationship, reassessed on a regular basis in terms of its contents and the performance of the two parties, would bring some order to all of the existing systems of supplementary pay, while ensuring that these incentive mechanisms were really working in the interests of the institution. The new needs that universities now face, as their missions evolve, could be fully taken into account and the motivation of university teachers to serve the interests of their universities would be reinforced. This would enhance accountability and, by differentiating the services of university staff, would allow the universities to benefit more effectively from the full range of their staff’s skills and capabilities. This proposal, moreover, is fully consistent with greater university autonomy (indeed it is an essential condition for real autonomy) and with the globalisation of their budgets.
It could even be introduced without calling into question the sacrosanct status of public servants (remembering that this status was granted to the universities under the Empire, primarily no doubt so that the State could exert control over its personnel, rather than from any concern to guarantee their liberty!). There are several possible approaches. A global multiyear service contract signed between a university and each of its teachers, as described in the Espéret report, would surely be the easiest to implement. Another approach might be to second or “lend” [detacher] teacher scientists to universities and higher education institutions. Personnel would retain their general status, but their secondment would require the signature of an agreement for each teacher researcher assigned to the university in this way. Still another approach – and the list is far from exhausted – would be to offer teachers the choice between retaining their public servant status or signing a private contract of employment with the university. There are many examples in France of public institutions where staff are not public servants but work under contract to their employer, i.e. the public institution within which the work. In all of these situations, of course, having a contract between the teacher and the university implies a personalised definition of tasks for each teacher, based perhaps on a core list of duties, and perhaps also the establishment of a broader salary range. On this last point, and without setting off the alarm bells, I may say that in France today, at any given level of hierarchy, pay levels will differ greatly from one teacher researcher to the next, since all are perfectly aware of the possibilities of winning supplementary pay under conditions that are fully consistent with the regulations but that are nonetheless completely individualised.

Yet this notion of a contractual arrangement or agreement, if you like, between the university and its teaching and research staff will make sense only if it is accompanied by greater accountability in the content of those agreements and by a rigorous evaluation of staff competencies and contractual performance. This is obviously the real problem with such a system, and it brings me to the final point that I want to review briefly, which is the role of evaluation in making any incentive system, whether collective or individual, really effective and therefore a real instrument for change in higher education.

**Accountability and evaluation: two conditions for making an incentive system an instrument of change in higher education**

As you may have guessed at the beginning of my remarks, I believe that evaluation is the key to implementing a system of incentives and bringing accountability to the management and decision-making process of a kind that will produce a real transformation in higher education, in France as elsewhere. It is obvious that the many changes that we might like to see will remain dead
letters unless they are supported by a credible system of evaluation. This is true, whether we are speaking of the strategic plans of universities or the incentives that might be applied to individuals. For France, the problem lies in the fact that public institutions have no real culture of serious evaluation (with the exception of public industrial and commercial establishments, which are subject to a greater or lesser degree to assessment by the market). In this context, the university sector is no better or worse placed than other sectors that are dependent on the State. The first publications of the Haut Conseil de l’Évaluation de l’École [Senior Council on School Evaluation] (HCE) on the evaluation of university instruction have proposed a number of interesting approaches, and have highlighted a number of practices already in place in some French universities. Yet the evaluation of teaching will be of no use unless it produces consequences for the relationship between universities and teachers, and therefore unless there is a contractual relationship between each teaching researcher and his or her university. Moreover, evaluating teaching is not enough. We must also evaluate universities’ management practices and their strategic plans. Here again, when it comes to evaluation, there is no lack of studies, surveys or evaluation agencies in our country. I cannot resist telling you, as a footnote to my written remarks, about a table prepared by Jean Pierre Finance, former president of Henri Poincaré Nancy 1 and delegate-general of the CPU to a meeting of Europe Latine Universitaire (ELU).

This table has no pretensions of being scientific, but it does show that there is no lack of institutions for evaluating universities and teachers in France. It also points to one of the weaknesses of that system, which is the fact that it is so dispersed. This dispersal creates a great deal of confusion, and leads to an absolute lack of co-ordination among the different evaluation procedures. This translates into very disparate methodologies (if there is any methodology at all) and means that institutions often respond to surveys on the basis of very different data, which then have to be reconstituted for every individual study. Moreover, it is common to find, with any survey conducted by one agency or another, that the evaluation agencies have no knowledge of the university system and therefore commit many errors, starting with their initial interpretation of the data provided to them. In fact, what is needed first of all is to set up a proper evaluation body that can co-ordinate methods and harmonise data. Such a body could organise and co-ordinate the evaluation and help to prepare a common methodology. Without pretending to know what that methodology might be, I think that it should give a heavy role to on-site evaluation, involving interviews with university personnel and partners, and that it should not rely merely on the off-site inspection of files, an all-too-French speciality. (Remember that when contracts were introduced in France some ten years ago, groups of experts were sent into the field, where they
examined and evaluated the authorisations requested by institutions. This practice has been abandoned, for lack of resources and also lack of will, and authorisations and contracts today result from evaluations that are based largely on off-site inspections conducted without any real methodology and with only a semblance of accountability).

The second serious shortcoming in the current approach to evaluations in France is that they hardly ever involve evaluators from outside the universities and the public sector. The Court of Accounts [Cour des Comptes] and the economic and financial missions of the Ministry of Economy are external to the universities but they are certainly not external to the State. Let us make no mistake, the weaknesses of the French university system in terms of evaluation are simply one aspect of a broader dysfunction in the French State: public policies in France are hardly ever subjected to evaluation, and this is true not only for higher education but for many other fields of government intervention as well. When it comes to strictly academic and scientific aspects, then, the evaluation should be done by academics and scientists at least some of whom are from outside the French system. As to the managerial and strategic aspects of the evaluation, they should also be examined by experts who are external both to the university system and to the French public sector. In any case, the evaluation of research is already very often conducted externally, either by juries from the major international scientific journals or through industrial partnerships involved in applied research and training. If our higher education system is to retain its credibility, it will have to submit itself to the gaze of outsiders (speaking personally, this is why I am very much in favour of opening French universities totally to outside partners and new publics: openness of this kind automatically entails a much more thorough evaluation than could ever be conducted by an officially appointed agency).

With these points in mind, we must of course ask what is to be evaluated and what the evaluation is to be used for. Here again, without pretending to be exhaustive I would like to recall some points that emerged from the initial work on the evaluation that was undertaken by our Conférence (CPU). We need to distinguish between at least three levels. First of all, there is a very simple, even trivial level that involves having reliable and consistent statistics for every institution of higher learning. Such data certainly exist at the global level, and they are regularly updated by the Programming and Development Directorate (DPD) of the Ministry, which often does truly remarkable work and produces publications of great interest. Yet it is not clear that these data are entirely reliable or that they can provide for a quick and coherent reading of the situation, since they are supplied by institutions that follow very different practices and that often give responses with very different meanings to questions that are posed in the same terms to all. In other words, what we
need is to evaluate and monitor continuously the reliability of the statistics system used by the ministry itself. The second level concerns quality assurance. Institutions’ management procedures and decision-making procedures, at least, should be the subject of regular evaluations. The pooling of the universities’ major administrative functions, through the AMUE, has done much to harmonise management practices and to improve them, and this is no doubt the first step towards a joint approach to quality assurance. Indeed, and this is something of a paradox, the controls over the legality of university presidents’ management decisions, which are supposed to be performed by government offices, could, if they were handled more intelligently, contribute to building this system of quality assurance for French institutions. The third level of evaluation concerns what we might call strategic evaluation: judging and evaluating an institution’s capacity to set and meet strategic objectives for itself. There is no point, for example, in concluding that an institution is falling behind in its international policy if it had never made this a priority objective in the first place, whereas the same institution could have an outstanding policy on continuing education and yet it might never be evaluated for that. The quality of any policy pursued by the universities should of course be assessed in light of the objectives it has set. At the same time, the strategic evaluation of the university should focus on its capacity to implement incentive mechanisms, both internally and externally, so that it can more readily and more effectively achieve the strategic objectives that it has set. This strategic evaluation, as I have described it, would provide a link between incentives and accountability. The evaluation should in fact help not only to improve the university’s functioning through the recommendations that will be made, but it should also serve as the basis for allocating needed resources.

All of the points that I have discussed during my presentation are, of course, parts of the same puzzle:

- Autonomy for institutions, to enhance their capacity to define and implement a strategy based on objectives that are shared internally with members of the university community and externally with partners, and also to define and implement collective and individual incentives that will allow those objectives to be reached more easily.

- Evaluation, so that partners, principal among whom are no doubt the public authorities, can form a judgement on the plans that are submitted to them and the resources they are asked to provide.

The French system certainly has a long road ahead of it in putting together all the parts of this puzzle. But is that road really any longer than the one facing other higher education systems with which we are familiar in Europe? I am not at all sure about that. In any case, I am convinced that failure
to make the effort would be fatal to our system, and at the same time I believe that the system already has in hand many of the elements that will allow it to pursue that route without running too many risks.

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## Annex 1

**Table of evaluation practices in France**

<table>
<thead>
<tr>
<th>What is evaluated</th>
<th>Teaching</th>
<th>Research</th>
<th>Institutional management</th>
<th>Global Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel (teachers, researchers)</td>
<td>CNU</td>
<td>CNU</td>
<td>CA, CS</td>
<td>CA, CS</td>
</tr>
<tr>
<td>Students</td>
<td>CA, CS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Centres</td>
<td>MSU</td>
<td>MSU</td>
<td>IGAENR</td>
<td>CNER</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cour des comptes</td>
<td></td>
</tr>
<tr>
<td>Departments and branches of instruction</td>
<td>MEN</td>
<td></td>
<td>CTI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CPN (IUT, IUP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CTI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>MEN</td>
<td></td>
<td>CNE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(CEPPE)</td>
<td></td>
<td>IGAENR</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MEEF</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cour des Comptes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CPU working groups</td>
<td></td>
</tr>
</tbody>
</table>

**Definitions:**

- **CNU:** Conseil national des universités (⅔ members elected, ⅓ members appointed by the Ministry). Only for teachers-researchers or researchers. Peer evaluation.
- **CA–CS:** Conseil d’administration (Board of Governors) and Conseil scientifique (Scientific council) of the universities. Students of regulatory provisions: organise evaluation in instruction (not teachers directly).
- **MSU:** Mission scientifique universitaire [University Scientific Mission]. Evaluates doctoral programmes, in both research and National Education, with an expert group appointed by the Ministry.
- **MEN:** Ministère de l’Éducation nationale.
- **CPN:** Commissions pédagogiques nationales for IUT, IUP.
- **CTI:** Commission du titre de l’ingénieur [Engineering Qualifications Commission].
- **CEPPE:** Comités d’expertise des projets pédagogiques des établissements [Advisory committees on institutions’ teaching plans], experts appointed by the Ministry.
- **EPST:** Établissements publics de science et technologie: research organisations that have their own evaluation body (these are research organisations: CNRS, INSERM, etc.).
- **IGAENR:** Inspection générale de l’administration de l’Éducation nationale et de la Recherche.
- **Cour des Comptes:** National body that oversees proper application of budgetary and financial rules in public administrations and establishments.
- **CNE:** Conseil national d'évaluation created by law, independent of government.
- **MEEF:** Mission d’expertise économique et financière (missions installed in the Public Treasury offices in each region).
- **CNER:** Conseil national d’évaluation de la recherche.
- **CPU:** Working groups on university finances, on contracts, on evaluation.
Public Universities: A Benchmark for Higher Education in Brazil

by

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Federal University of Rio Grande do Sul, Brazil

Abstract. Over the past few years, the debate on the future of higher education in Brazil has been by and large split into two camps. One side stresses the urgent need to broaden the system, to allow a growing number of Brazilians to gain qualifications and enter an increasingly competitive and international labour market as skilled workers. This is the view behind the significant expansion of private higher education in Brazil over the past decade. The other side does not disregard the problems of public higher education, or the demands of thousands of young people deprived of a university education, but holds that the expansion of higher education should be based on the conclusions of the 1998 World Conference on Higher Education in Paris. Rather than setting public against private education, this approach envisages the growth of the system as a whole, on the premise that education is a strategic asset for national development, a universal right and one of the duties of any State.
Introduction

Universities produce and transmit a wealth of cultural and scientific experience that belongs to mankind, and yet they are not always accessible to all. In each country, the gradual emergence of universities has been shaped by distinctive social developments and institutional trajectories. For that very reason, further insight into the current debate in Brazil on the mission of public universities, their funding, productivity and governance can only be gained by starting with an historical overview of Brazil’s experience in this field.

By and large, the institutions that go to make up Brazil’s higher education system, whether public or private, fall into three categories, namely universities, joint faculties and what are known as “isolated” units. Most of the country's public universities are part of the Federal Higher Education System. These are the “federal universities”, managed and funded by the federal government. Brazil also has a large number of public universities run by the federal States and known as “estaduais” or what we might call “regional” universities, as well as some municipal universities.

In 1999, 2,377,715 students were enrolled on “graduação” or undergraduate courses in the country's universities and other higher-education facilities, both public and private. Of those students, 1,544,622 were in private education, i.e. 65%. However, of the 86,851 students enrolled that year on master's and doctoral courses in the same institutions, only 11,509 were in private education, i.e. 13%. This second set of figures reflects an important feature of the Brazilian higher education system, namely the close link between teaching and research in public universities. These and other public institutions account for virtually all the research carried out in Brazil.

Brazil’s higher education system expanded noticeably in the 1990s, as the figures in Tables 1, 2 and 3 show. From 1994 to 1999, enrolment rose by 43% on undergraduate courses, 23.5% on master’s courses and 58.4% on doctoral courses. This growth can be put down largely to private-sector expansion, as can be seen from Table 4. Over the period 1994-1999, for example, i.e. only half a decade, the number of places available in the private sector almost doubled. In 1999, private institutions offered 115,689 more places than in 1998, a figure in excess of the overall number of places then available throughout Brazil's federal system of higher education! This sharp growth in private-sector provision stems from two factors, namely an increase in the places available in existing universities, and the establishment of new universities and
isolated units – the kind of growth that is often accompanied by a decline in the quality of educational provision.

Further aspects relating to these figures are addressed below. However, it is worth noting that 12% to 15% of the Brazilian population aged 18-24 are enrolled in higher education.3

From a broad historical perspective, the gradual construction of the higher education system occurred in five phases, beginning with the

### Table 1. Undergraduate courses: number of students enrolled (1981-1999)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Educational institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Federal</td>
</tr>
<tr>
<td>1981</td>
<td>1 386 792</td>
<td>313 217</td>
</tr>
<tr>
<td>1994</td>
<td>1 661 034</td>
<td>363 546</td>
</tr>
<tr>
<td>1996</td>
<td>1 868 529</td>
<td>388 987</td>
</tr>
<tr>
<td>1998</td>
<td>2 125 958</td>
<td>408 640</td>
</tr>
<tr>
<td>1999</td>
<td>2 377 715</td>
<td>422 835</td>
</tr>
</tbody>
</table>

Source: Ministry of Education, National Institute for Educational Studies and Research (INEP).

### Table 2. Master’s courses: number of students enrolled (1987-1999)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Educational institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Federal</td>
</tr>
<tr>
<td>1987</td>
<td>31 717</td>
<td>15 862</td>
</tr>
<tr>
<td>1994</td>
<td>46 086</td>
<td>23 298</td>
</tr>
<tr>
<td>1996</td>
<td>45 622</td>
<td>23 725</td>
</tr>
<tr>
<td>1998</td>
<td>50 931</td>
<td>26 681</td>
</tr>
<tr>
<td>1999</td>
<td>56 911</td>
<td>29 337</td>
</tr>
</tbody>
</table>

Source: Ministry of Education/CAPES (agency for graduate education).

### Table 3. Doctoral courses: number of students enrolled (1987-1999)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Educational institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Federal</td>
</tr>
<tr>
<td>1987</td>
<td>8 366</td>
<td>2 469</td>
</tr>
<tr>
<td>1994</td>
<td>18 907</td>
<td>6 941</td>
</tr>
<tr>
<td>1996</td>
<td>22 198</td>
<td>8 658</td>
</tr>
<tr>
<td>1998</td>
<td>26 810</td>
<td>11 251</td>
</tr>
<tr>
<td>1999</td>
<td>29 940</td>
<td>13 027</td>
</tr>
</tbody>
</table>

Source: Ministry of Education/CAPES (agency for graduate education).
Portuguese court’s move to Brazil in 1808. To understand how the system evolved, we need to look at specific events and processes that took place outside the academic world and were to prove decisive not only for the future of the universities but also for Brazil’s emergence as a nation. An in-depth study of those contributory factors would not, however, be relevant here.

**Historical overview of the Brazilian higher education system**

Compared with universities in Spanish America, those in Brazil emerged relatively late. No universities were transferred to Brazil during the colonial period or under the Empire (1822-1889), but a few schools were set up and served to found the first Brazilian university. In the early 19th century, when the Portuguese court moved to Brazil, a number of schools were established in the cities of Rio de Janeiro and Salvador da Bahia, the former capital of the colony. Rio de Janeiro, for instance, was given a Royal Military Academy and an Academy of Medicine and Surgery. In 1874, under the Empire, the Royal Military Academy became the Polytechnical School.

With the advent of the Republic in 1889 came a new phase. A host of schools and faculties appeared, most of them training students for careers in medicine, engineering and law. Around 1910, the cities of São Paulo, Manaus and Curitiba were the scene of initial attempts to establish universities. But the experiments failed – either the universities did not even come into being, or their existence was precarious and short-lived.

In 1920, one of the initiatives to commemorate the country’s independence was the founding of the University of Rio de Janeiro, later the University of Brazil and what is now known as the Federal University of Rio de Janeiro. The approach used here, i.e. merging existing public and private institutions, would subsequently serve as the model for virtually all the country’s universities. One was the University of Minas Gerais, founded in Belo Horizonte in 1927.
In 1930 Getúlio Vargas came to power and the third phase of Brazilian higher education began. In April 1931, the new Ministry of Education and Health began awarding the status of Brazilian University. Prior to that time, the founding of universities was not regulated by the federal government. Using these new rules, but the same model that had served to found the University of Rio de Janeiro, i.e. merging existing schools and faculties, public universities were set up in the cities of São Paulo and Porto Alegre (1934), then Recife and Salvador da Bahia (1946). During that time, the model was also used to found Brazil’s first private universities: the Catholic Universities of Rio de Janeiro and São Paulo (1946) and then Porto Alegre (1948).

The next phase began in 1950, when the Federal System of Higher Education was formed. The country’s public universities, with the exception of São Paulo, were “federalised”, meaning that they would henceforth be run by the federal government. The public system of higher education then underwent significant expansion. During the presidencies of Getúlio Vargas and Juscelino Kubitschek, a further 14 federal universities were founded.5

In 1961, when the recently elected president Jânio Quadros resigned, the Brazilian political system was plunged into crisis, culminating in a military coup in 1964. By then, the country had 22 universities and 125 other public institutions delivering higher education, as well as a private sector comprising 12 universities and 86 other institutions (see Table 5). Their combined enrolment amounted to almost 100 000 students, some 80% of them in public education. The picture began to change from 1964 onwards, with the putsch and the onset of the last phase of change to have affected higher education in Brazil.

Table 5. **Number of public and private institutions providing higher education in Brazil in 1961 and 1998**

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities</td>
<td>22</td>
<td>77</td>
<td>12</td>
</tr>
<tr>
<td>Joint faculties</td>
<td>93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolated institutions</td>
<td>125</td>
<td>132</td>
<td>86</td>
</tr>
<tr>
<td>Total</td>
<td>147</td>
<td>209</td>
<td>98</td>
</tr>
</tbody>
</table>


Initially, the military maintained the pace of expansion in the Federal Higher Education System, while at the same time relaxing the requirements for granting university status, with the transfer of substantial public resources to the private sector, thereby creating mechanisms to facilitate the expansion of private provision. Over the years, in response to requests from private
institutions, the military regimes would eventually do away with the “federalisation” process launched in 1950, and regional public universities once again became a feature of the system. Yet it is worth noting that those same military regimes (1964-1985) also invested significantly in public universities, with a view to developing scientific research. From the 1970s onwards, that investment brought about considerable growth in the scope and importance of postgraduate courses in the higher education system as a whole.

In the late 1980s, however, governments came to exercise strict control over the budgets of federal universities. Public universities became subject to restrictions on the recruitment of senior staff and on investment aimed at raising enrolment. By the mid-1990s, against a background of globalisation, there had already been a marked rise in the number of private-sector providers within higher education. In 1998, as shown in Table 5 (universities plus joint faculties and isolated units), Brazil had 973 higher education institutions, only 209 of them public.

### Legacies and challenges

Throughout its history, Brazilian society has had little success with the funding of new universities, whether by the public or the private sector. Today’s leading public and private universities were all established using the same model, i.e. merging schools and faculties. Moreover, Brazilian history shows that the public and private education systems have always been “complementary”, as it were, since the public sector has never attempted – or had the resources – to finance higher education in its entirety.

One of the legacies of the past to have left its imprint on Brazilian higher education is institutional fragmentation, a problem visible today in the Federal Higher Education System too. In fact public and private universities are by no means uniform categories. Public universities account for practically 90% of the scientific research conducted in Brazil. Yet all of this research and the best postgraduate courses are concentrated in a handful of universities, particularly the regional universities of São Paulo and Campinas and the federal universities of Rio de Janeiro, Brasília, Minas Gerais (Belo Horizonte), Pernambuco (Recife) and Rio Grande do Sul (Porto Alegre). It is worth noting, however, that some private universities are of a very high academic standard.

The picture of higher education in Brazil today is therefore somewhat complex and would certainly merit a major in-depth study that cannot be included here. In any event, the public system of higher education in Brazil is currently in a phase dominated by deep uncertainty about the future. According to senior government officials, the current funding model for the
Federal Higher Education System, which does not charge monthly tuition fees, may be drawing to an end.\textsuperscript{6}

Various indicators reveal a steady decline in public funding for federal universities over the past few years,\textsuperscript{7} forcing them to find new sources of funding including service delivery. The system’s failures are also affecting the private sector, where high enrolment costs are generating a steady increase in the number of students unable to pay their monthly fees.\textsuperscript{8}

Table 6. Number of places available, applicants and students enrolled in public and private higher education institutions in 2000

<table>
<thead>
<tr>
<th>Higher education</th>
<th>Educational institutions</th>
<th>Total</th>
<th>Public</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Places available</td>
<td></td>
<td>1 216 287</td>
<td>245 632</td>
<td>970 655</td>
</tr>
<tr>
<td>Applicants</td>
<td></td>
<td>4 039 910</td>
<td>2 178 918</td>
<td>1 860 992</td>
</tr>
<tr>
<td>1st year students</td>
<td></td>
<td>897 557</td>
<td>233 083</td>
<td>664 474</td>
</tr>
</tbody>
</table>


Consequently, there are a host of major challenges to be met. While universities have viewed themselves from the outset as centres for the production and transmission of cultural and scientific knowledge that belongs to all mankind, those in Brazil appear to be encountering innumerable obstacles in achieving this. On the one hand, universities can only accomplish their mission by remaining at the frontiers of knowledge, and must even seek to break new ground. This requires substantial investment, not to mention patience, as scientific progress is a long-term commitment. On the other hand, universities cannot achieve their mission without extending their outreach, without putting back into society the knowledge which in fact belongs to everyone. From that standpoint, the situation in Brazil is both paradoxical and dramatic. As shown in Table 6, only 68% of the places available in private institutions in the year 2000 were actually taken up. In other words, both public and private university places remained vacant that year in Brazil’s higher education system as many young people did not have time to study, either because they had to earn a living for themselves and their families, or simply because they could not afford such an education. In Brazil today, thousands of young people are deciding against enrolling at university, either because there are too few places in public institutions, or because the places available in the private sector may well be rising in number but are too expensive.

In short, the main priority of Brazilian higher education over the past decade has been to increase the number of places available. While this goal is
fast being met, the figures show that there has been no corresponding increase in university enrolment and, worse still, no rise in the enrolment of young people from poorer backgrounds. On the contrary, research reveals that the proportion of “low-income” students in Brazilian higher education in the 1990s fell from 8.5 to 6.9%.

Commitments

If universities, with their potential for inclusion and social integration, find their mission hampered even in the “developed” world, the problem is clearly more critical in countries like Brazil, which suffer from severe inequalities and whose experience of universities is relatively recent. The problem is compounded by the many other goals to be achieved by many Brazilian universities, one being to strengthen their position as institutions qualified to produce and transmit a “good” that is increasingly “costly”, i.e. knowledge.

Over the past few years, the debate on the future of higher education in Brazil has been by and large split into two camps. One side stresses the urgent need to broaden the system, to allow a growing number of Brazilians to gain qualifications and enter an increasingly competitive and international labour market as skilled workers. This is the view behind the significant expansion of private higher education in Brazil over the past decade.

The other side does not disregard the problems of public higher education, or the demands of thousands of young people deprived of a university education, but holds that the expansion of higher education should be based on the conclusions of the 1998 World Conference on Higher Education in Paris. Rather than setting public against private education, this approach envisages the growth of the system as a whole, on the premise that education is a strategic asset for national development, a universal right and one of the duties of any State.

Brazil’s public universities are certainly experiencing their own “in-house” problems and failures – and those in charge of them know that more resources are not the answer. They also know that the problems facing these universities will not be solved with new “management techniques”. What is needed is a change of attitude throughout the academic community. Again, the Paris Conference should serve as a benchmark for any action to achieve this. A public university should readily be viewed, like knowledge itself, as part of our social heritage, as the fruit of a collective effort that endures with the passing governments and generations, and as what Roland Barthes wisely described as acratic or independent of power. In such a strongly hierarchical institution with the emphasis on individual merit, and in an increasingly competitive society, a “collective effort” is certainly hard to visualise – yet this
is precisely the best approach and one that should be given increasing emphasis, particularly by the bodies evaluating institutional and academic performance. It is therefore important for the many groups that make up the academic community to extend an open invitation to become involved in and make a commitment to university governance.

Against a background of academic and institutional evaluation and the introduction of new technologies, Brazil's public universities should in our view give serious thought to four key themes developed at the Paris Conference: the relevance, quality, funding and internationalisation of higher education. We believe that, in the context of Brazil, it is in public universities that the commitments made by the international academic community in 1998 are most likely to thrive. The proof lies less in statistics than in the history of Brazil’s experience of universities.

Throughout the 20\textsuperscript{th} century, Brazil’s public universities played an extraordinarily vital role in modernising the country, developing its economic driving forces and forging regional identities. For those and many other reasons, and however severe the criticism, public universities still enjoy legitimacy in Brazil. Yet this complex, diverse structure that is probably one of the Republic’s greatest successes needs to be revamped. There appears to be a consensus on this today among university leaders, who are also aware that the process will only succeed with the active involvement of the academic community and society at large.

The Federal University of Rio Grande do Sul (UFRGS), of which I have been rector for the past six years, is one of Brazil's highest ranking institutions, according to a whole range of evaluation criteria. It has been recognised by the education authorities and society at large as being soundly governed. Yet this should not suggest that the UFRGS is free of many of the problems encountered by Brazil’s other public universities. To overcome its weaknesses and enhance its strengths, it has launched a series of initiatives, beginning with a Management Plan based from the outset on the active involvement of broad sectors of the academic community – academics, administrative staff and students.

The debate leading up to the Management Plan, known as the \textit{Universidade Viva} ("Living University"), took as its starting point the definition of a university as an institution gradually built up by "collective effort" over several generations. But it is destined never to be completed, and should view its role as the legatee and vehicle of change for all the cultural and scientific experience accumulated by mankind. The debate accordingly concluded that universities should not turn their backs on their own history and identity but open up to their own diversity and, more importantly, to the demands of society. As "living", open, multi-faceted institutions, universities should move
with the times by learning how to innovate on an ongoing basis. The debate about the *Universidade Viva* was also worthwhile in educational terms. It raised awareness among large sections of the academic community that our financial, material and human resources should be allocated according to precise criteria, based on pre-defined goals and specific programmes and projects.

Democratising and modernising university management were two themes highlighted in the debate on the *Universidade Viva* and its implementation. One of the key challenges was perceived to be the academic community’s involvement in university management, a long-term commitment requiring familiarity with university life. During the debate on the Management Plan, the academic community realised, for instance, that the UFRGS knew very little about itself. We form a community of over 35,000 people spread across four campuses, with a choice of hundreds of courses (undergraduate, specialisation, master’s and doctoral) as well as numerous libraries, laboratories and teaching units (schools, faculties and institutes), not to mention the various administrative services and institutions. Hence the project known as “Democratising Information”, which includes initiatives to provide fuller information giving guidance on proposed improvements and solutions to our problems, and give the academic community and society at large better access to information. Thanks to this project, for instance, we have published easy-to-read reports on UFRGS activities featuring not only graphics and statistics but also quality evaluations, comments and photos – while at the same time giving a strictly accurate assessment of the activities. Thanks to these widely disseminated reports, it is now safe to say that the UFRGS is better informed about itself. Another example of an initiative to democratise access to information is the availability of our library resources on-line. Of course computer-users also have access to a wide variety of other academic and administrative information and services via our Internet site (www.ufrgs.br).

As part of the *Universidade Viva* plan, we have also introduced “management seminars”. These are held once a week and are attended by leaders, managers, academic/administrative commission co-ordinators, and representatives of the various councils, student bodies, teaching and clerical staff – in short a wide range of university officials. Other participants include colleagues from other universities and representatives from “outside” organisations, who are invited to take part in our debates as guest speakers. The first seminar, on “The university of the 21st century”, was held in 1997. At these meetings, we discuss daily life at the university, training for the world of work, the role of knowledge in economic and social development, and international co-operation. During the year, the conclusions reached at these management seminars serve as a basis for other meetings on themes that
require more urgent or detailed consideration, thereby subjecting our proposals and projects to a continuous process of analysis and enhancement.

Another major initiative under the *Universidade Viva* is institutional and academic evaluation, which has gradually become a permanent feature of life here at the university. We began by setting up an Institutional Evaluation Secretariat with the same status as the leading bodies involved in university governance. The Secretariat’s main task is to assess the “collective” nature of our teaching and administrative work, focusing on the practical aspects of our academic project and on our concern to make management tools effective and efficient.

We view the democratisation and modernisation of university management as crucial to Brazil’s public universities. But the UFRGS, like other universities, must innovate and progress in many other ways. Brazilian society sees its public universities as institutions that can adopt solutions to a whole host of problems, ranging from the simplest, most immediate and urgent ones to those requiring major, long-term investment. As centres for research and knowledge production, they are approached by small rural communities, owners of small businesses and village mayors as well as by city mayors, regional government authorities and major firms in the public and private sector. Closer links with governments, enterprises and social movements are also, in our view, vital for change in Brazil’s public universities. Universities cannot turn down partnerships. They can and must deliver services. However, this kind of activity should always be based on criteria that are clearly defined as part of an academic project. The UFRGS is now committed to more than 800 agreements with community groups, trade unions, NGOs, municipal authorities and small firms, and also with major enterprises in a wide range of industries from petrochemicals (Petrobrás, Copesul), and steel (Gerdau) to computers (Dell). Some of these agreements are for the transfer of very basic technology, while for others the university will be exploring the very frontiers of knowledge. But the important point is that for public universities, the benefits of providing services or meeting any other demand lie less in the potential financial returns than in what they can gain from putting back into society the knowledge they are developing, and what they can learn from such partnerships about society as a whole.

Faced with such wide-ranging demands, Brazil’s public universities have therefore to meet the dual challenge of developing closer ties with local communities while at the same time broadening their international outreach. This is why we at the UFRGS have encouraged the formation of networks and research groups, academic mobility and exchanges with universities and countries already working closely with us (e.g. France, the United Kingdom, Germany, Canada, the United States and Japan) and with universities in other Latin American countries, with which we have recently – and paradoxically
perhaps – been establishing the same kind of ties, particularly the MERCOSUL countries (via the Montevideo Group Universities Association). Then there are our ties with the Spanish and Portuguese universities, which help to bring cultural identities in the Spanish American world closer together.

Closer links with society have shown the UFRGS community that we can no longer stay out of the debate on the importance of research within individual universities and in Brazilian higher education as a whole. Where public universities are concerned, we believe that knowledge generation should be more clearly associated with teaching work. Furthermore, in the name of academic freedom, public universities should not neglect specific social demands or, worse still, focus solely on a few members of the academic community and specific fields of knowledge. Consequently the UFRGS has placed great emphasis on: a) projects integrating teaching and research; b) closer links between the university and various sections of society via academic extension; and c) research across all branches of knowledge, in particular the less developed fields, and increasing interaction with productive sectors and the economic and social development policy-making institutions.

Another initiative launched by the UFRGS to tackle the problems it encounters seeks to rebuild the community spirit. Public universities have to overcome their growing fragmentation. Where Brazil is concerned, universities in general but more specifically those in the public sector are socially significant because they create material wealth for the country but also, and more importantly, moral and spiritual “values”. Universities are and must continue to be places in which a range of different disciplines and forms of education can exist side by side. The best feature of our public universities is this diverse, multifaceted atmosphere which, more than anything else, helps our young people to do what is asked of them and act as responsible citizens in the world of work. The UFRGS has undertaken numerous initiatives of this kind. One has been to found the Jornal da Universidade, a monthly publication giving every section of the university community its say in articles on the key issues facing public universities, as well as the more mundane aspects of life at the UFRGS. We have also set up an architectural project to renovate our oldest campus in the city centre of Porto Alegre. Involving the community formed by UFRGS alumni, administrative and academic staff, the project has had excellent results and led to closer and more tangible ties between the university and the city.

Many other topics merit consideration here, if only briefly, as a further illustration of the UFRGS’ recent trajectory as one of Brazil’s public universities. However, for want of space I should like to conclude on a brief personal note: my experience of university teaching and governance has convinced me that Brazil’s public universities will make no headway if the
academic community does not have a “university vision”, i.e. a clear perception of a public university’s mission and the debt it owes to “collective effort”. In my view, this is crucial if we are to foster a general attitude of involvement rather than allowing conservative mentalities to prevail, preventing or undermining any attempt to promote change.

Notes

1. The statistics in this paper are, unless otherwise indicated, from the Higher Education Survey conducted jointly by the National Institute for Educational Studies and Research (INEP) and the Ministry of Education – www.mec.gov.br/superior/censosuperior/default.asp

2. See, in this connection, “Public funding of research and institutional responses: the example of Brazil”, by Maria Alice Lahorgue, presented at the IMHE General Conference, Paris, 16-18 September 2002.

3. There is some controversy as to the proportion of young Brazilians entering higher education. However, all available indicators show that only a small number manage to complete their university education.


5. In the cities of Fortaleza (1954), João Pessoa (1955), Belém (1957), Natal and São Luis (1958), Juiz de Fora, Santa Maria, Curitiba, Goiânia and Florianópolis (1960), Brasília, Niterói, Macaé and Vitória (1961). During the same period, Catholic Universities were established in Recife (1951), Belo Horizonte (1958), Curitiba and Pelotas (1960), together with the Mackenzie University in São Paulo (1951).

6. In Brazil’s public universities, undergraduate and postgraduate education is free of charge.

7. For instance, investment in federal universities from 1995 to 2000 fell from 396.1 to 216.2 million reals according to a recent report by the National Association of Directors of Federal Higher Education Institutions.

8. For students in the private sector, the federal government has a loan scheme whereby the government pays monthly instalments directly to the institution so that students do not need to begin reimbursing their loans until they have completed their education. However, the scheme has now run into serious difficulties, mainly because many students cannot meet their repayments.

9. A study by Simon Schwartmann shows that, during the 1990s, the proportion of higher-education students from the top 20% of wealthiest households rose from 67.1 to 70.7% of the total number of students. See “Crescimento de vagas não leva pobre à universidade”, Folha de São Paulo, 27 May 2002, p. c-1.

10. The fact that UFRGS has signed so many and such diverse contracts with firms as well as governmental and non-governmental organisations prompted us to set up a new administrative structure with a special focus on technology transfer: the
Secretariat for Technological Development. Along with other university bodies such as the Research Pró-Reitoria, it has made a significant contribution towards closer ties between the UFRGS and society at large, and towards progress in our R&D work.
Ministerial Steering and Institutional Responses: Recent Developments of the Finnish Higher Education System

by

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Abstract. As part of the public sector reform, Finland reformulated its higher education policy in the late 1980s. It also included a profound reform of the government policy implementation instruments within the university system. As a result, a steering model based on the regulation of results instead of inputs was built up, and the autonomy of traditionally heavily regulated universities was increased. The planning and budgeting dialogue between the Ministry of Education and universities was simplified, and the system of performance negotiations and agreements was established. Also, a funding formula, based first on institutional goals agreed upon in the performance agreements, and later, to an increasing degree, on outputs, was established. The new steering model was implemented in the situation, which was characterised by comprehensive linking of Finnish higher education policy to economic and industrial development policies and the information society policy, in particular. The universities have been faced with a challenge of improving their management capacity to be effective in their responses to the new governmental steering and to the changing policy environment, in general. The paper is based in two ongoing empirical studies by the authors, one about the change of the governmental steering instruments from the mid-80s to the present time and the other about the institutional reactions to the present steering-by-results model. The theoretical basis for the paper is provided by the theories of institutional governance.
Ministerial steering and institutional responses – recent developments of the Finnish higher education system

The developments of government steering and institutional management in Finnish higher education system have followed the international trends, especially those implemented in OECD countries, within the last fifteen years. Some management solutions are still unique in Finnish higher education, many of them have been linked with the comprehensive public sector reform, and some details have been unique in the sector of higher education. During the last 10-15 years the western countries have been faced with the trends like cutting down bureaucracy, decentralising decision making, reducing costs and dismantling norms. The role of higher education administrators has changed dramatically. Instead of controlling academic work, they have found a new role in creating strategies, setting goals and evaluating performance. They have had to concentrate more on producing services for the academic community than controlling how the regulations have been followed.

The paper will be based in two ongoing empirical studies by the authors, one about the change of the governmental steering instruments from the mid-80s to the present time and the other about the institutional reactions to the present steering-by-results model. The theoretical basis for the paper is provided by the theories of institutional governance.

In Finland, higher education is given in 20 universities and 29 AMK institutions (polytechnics). The scope of this paper is restricted to the university sector only. All the universities are state-run and they receive their core funding from the state budget. The AMK institutions are either municipally or privately run and co-financed by the government and local authorities. Finnish education legislation is passed by Parliament, which also determines the overall lines of education policy. The 1998 Universities Act enlarged the latitude of universities in internal matters. The universities are free to decide their internal organisation and decision-making structures. One significant limitation for institutional autonomy is that the fields of education represented at each university are still determined by the acts. The Government adopts a Development Plan for Education and University research for a six-year period every four years. The Higher Education Evaluation Council, a semi-independent buffer body, which was established in 1995, assists the universities and AMK institutions in matters relating to
evaluation. The Academy of Finland takes care of central research administration and finances most university research.

Public sector management

Ten years ago, OECD stated that national economic efficiency is treated as an outcome of the efficiency of both the public and the private sector. The public sector has a significant effect on economic performance through its direct impacts as a buyer as seller of goods and services; its indirect effects on product and labour markets; and the burdens it may place on private activity through poor administration and inadequately conceived or unnecessary regulations. Structural adjustment policies must, therefore, include reform of the public management system among their targets (OECD/PUMA, 1990)

Major reforms have been implemented in public sector since OECD statement in question. Pollit found in 1995 that particular great political impacts have had such procedures like decentralised budgeting techniques, performance based funds and bonuses, standards for activities and especially quality of public services, contracts instead of hierarchies, evaluation and value for money thinking (Pollit, 1995, p. 203) McMahon describes these reforms as a transition from old public administration to New Public Management (NPM). It includes following features:

● Cutbacks in the management of public bureaux, reducing budgets, resources and staff numbers.
● Public bureaux cease supplying any private goods whether in competition with the private sector or not.
● User-pay arrangements where users, usually without subsidy or “at cost”, pay for consumption of public goods provided by public bureaux.
● Contractual delegation of functions from public bureaux to private sector suppliers.
● Termination of public sector activity, allowing market forces to determinate if the resultant gap should be filled or not by private sector activity.
● Removal of regulations hampering competition on both an intranational and an international basis.
● Sale of public bureaux and public assets to the private sector, especially of utility and telecommunication suppliers (McMahon, 2001, p. 694).

One significant feature in the Finnish public management development is a high degree of continuity since the beginning of 1990 in spite of political coalition in power, the use of gradually progressing projects and pilot projects to respond to the changing requirements of the environment of the public sector. According to the evaluation projects launched by the Ministry of Finance in Spring 2000 the steering-by-results has functioned as the
managerial core process and also offered a positive context for the development of strategic management and management of international affairs. However, the development so far has been uneven at the level of agencies. Personnel management and supervisor work have been the most difficult managerial sub-area through all the 1990s. The material of evaluation implies that general management within the state administration is still relatively weak and superficial because of administrative traditions. As one response to that feature the evaluators suppose a “broadened management by results” which have to be integrate strategic management, personnel management and management by results into a more controlled process (Temmes et al., 2001, p. 15)

They see that the continuing development of management systems is one of the main challenges in the future. The goal is to improve management by results into an efficient, effective and legal way to guide public organisations. As practical efforts they suggest: evaluations of the efficiency of result based management systems, personnel management training based on case studies, and development of models for management evaluation (Temmes et al., p. 16) In the university sector there is now a working group evaluating the steering-by-result procedures of universities and in the autumn it will make proposals for the development of the system and specific practices related to the interaction between the Ministry of Education and universities.

Starting point for the Finnish university steering and management reform

A close connection between Government and the universities has characterised the Finnish higher education system throughout the development of the higher education system. The transition to the new higher education management policy began in the Middle of 1980s. The starting point to the approach can be focused on the decision by the Council of State in September 1986. In that time, the Finnish universities, opposite to universities in most other western countries, faced very favourable economical conditions. The Finnish Council of State’s decision guaranteed 15% increase to the central appropriations related to research and instruction. However this did not took place without preconditions. The Government required, in particular:

- That the conditions for goal oriented management be improved and the possibilities of institutions of higher education to independently decide on the use of funds allocated to them be increased, and the workloads of teachers be decided more flexibly.
● That research carried out in institutions of higher education be more systematic and planned and co-operation between institutions of higher education be made more efficient.

● That all institutions of higher education apply a system of performance evaluation producing sufficient and comparable data on the output and costs of research and teaching.

● That institutions of higher education regularly report on the result on their activity.

● That in allocating new resources, the results achieved in research and teaching be taken into account.

These “that-sentences” can be considered the starting shot for result based management in the Finnish higher education system, although the term was adopted a few years later (see Hölttä, 1988 for discussion on the change of the government steering strategy in the late 1980s).

This turning point of the government steering was shown to be quite dramatic. Finland had been one of the most centralised higher education systems in Europe in terms of government control (see e.g. OECD, 1982). For universities it was easier to stand the new procedures e.g. allocation result based funds because of remarkable increase of resources in years 1988-91. The impacts of the deep recession reached the universities in 1992-94. Although the new steering strategy was formulated in the late 1980s and at the beginning of 1990s the long lasting misunderstanding could not be avoided that result based steering model was developed for allocating cutbacks and with the purpose that the universities had do the dirty work of institutional level cutbacks by themselves. Afterwards, it is interesting to notice that the basic elements of the new government steering strategy were stated within the university sector even before the general public sector steering reform was implemented.

On the basis of the analysis concerning the documents of the Ministry of Education at the beginning of 1990s it is possibly to indicate policy targets for the reform. These are, in particular:

● The delegation of decision-making to the institutional level.

● Reducing bureaucracy.

● Increasing the self-regulation powers of universities.

● Evaluation of performance and activities.

● Increasing dialogue between the Ministry and the universities.

● Creating negotiation and contracting procedures.

● Increasing efficiency.

● Increasing transparency of decision-making.
Increasing clarity of division of labour between universities.
Differentiation of institutional profiles of universities.

According to the ministerial activity and finance plan 1993-96, the strategy of the Ministry was:

- To transfer all possible flexibility in decision-making allowed by the statutes, to the universities.
- To attempt to support university management development at the institutional level with the purpose of transferring this flexibility to universities and their basic.
- To introduce the performance elements in funding with the purpose of increasing efficiency.
- To introduce the system of performance contracts between the Ministry and the universities.

The most important concrete means to increase the flexibility and institutional autonomy in decision-making were the system of lump sum budgeting (Halt and Pulliainen, 1991) and the system of flexible work load for academic personnel (Hölttä and Karjalainen, 1997). At the early stages of the steering and management reform, the specific features of the academic organisation were taken into account, but later, as the steering reform reached the whole public sector following the principles defined by the Ministry of Finance, many of these unique elements had to give way to the more uniform model of steering-by-result.

A unique feature of the steering and management reform in Finnish higher education was the establishment of the national university database. For getting better information on university inputs and outputs the KOTA database was build up in the middle of the 1980s. The database includes statistics on institutions and educational fields, i.e. information on costs and outcomes, like students, degrees, applications, personnel, exchange, open university instruction, further education, and facilities. KOTA serves planning, follow-up and evaluation of performance. It is used both the Ministry as universities. The database is maintained by the Ministry but the data are collected by institutions themselves and updated at the beginning of each calendar year. This database has made it possible to create contracting and funding models and a planning system, which are heavily dependent on the reliability of institutional information (for details, see Hölttä, 1998).

Examples of major changes in university management

Higher education is seen as one of the key factors in the development of the society and its economy in Finland. This is, for example reflected by the planned growth of resources even during the years of economic difficulties in
the country and, for example, by the role higher education was given in the implementation of the national information society strategy in the late 1990s (Hölttä and Malkki, 2000). It is obvious that centralised control and with bureaucratic procedures in the implementation were needed in the 1960s and 1970s to create the uniform and regionally distributed university system in Finland. However, this took place in static society. The 1980s and the 1990s, in particular, were the decades which linked higher education policy very tightly to the other areas of social and economic policy. The “closed system approach” had to be replaced by the “open system strategy”, in which the self-regulation powers of the institutions had to be emphasised (Hölttä, 1995). They had to provide autonomy to respond to social change at the local level. In fact, the response of the Finnish Ministry of Education to the new challenges was very quick and profound.

To illustrate the changes in steering of universities since mid-80s, the main issues are listed in the box.

<table>
<thead>
<tr>
<th>Middle-80s</th>
<th>At present</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Decision-making and bureaucracy</strong></td>
<td><strong>Decision-making and bureaucracy</strong></td>
</tr>
<tr>
<td>- The overall extent of the university system was based on student intake decided by the Ministry</td>
<td>- The overall extent of the university system is based on degree targets agreed on with the Ministry</td>
</tr>
<tr>
<td>- Several appropriations in university budget</td>
<td>- One lump sum for university expenditure</td>
</tr>
<tr>
<td>- One-year budget system</td>
<td>- Three-year budget system</td>
</tr>
<tr>
<td>- Several categories for employment status</td>
<td>- One category for employment status</td>
</tr>
<tr>
<td>- Establishment and abolishment of posts had took place through government budget procedure</td>
<td>- Posts are established and abolished by a university</td>
</tr>
<tr>
<td>- Innumerable directions for payments, acquisitions and procedures</td>
<td>- Very few directions</td>
</tr>
<tr>
<td><strong>Regulation and evaluation of performance</strong></td>
<td><strong>Regulation and evaluation of performance</strong></td>
</tr>
<tr>
<td>- Separate laws and acts for each university</td>
<td>- A single law and act covering all universities</td>
</tr>
<tr>
<td>- Internal organisation and decision making Bodies as well as composition of bodies defined by the act</td>
<td>- Autonomy in internal affairs</td>
</tr>
<tr>
<td>- Fields of education defined by the act</td>
<td>- Fields of education defined by the act</td>
</tr>
<tr>
<td>- Professors nominated by the President</td>
<td>- Professors are nominated by the university</td>
</tr>
<tr>
<td>- Control of how funds had to be used</td>
<td>- Evaluation of performance, semi-independent evaluation council (FINHEEC) co-ordinates evaluation, self-evaluation of universities</td>
</tr>
<tr>
<td>- Accounting audit by the State Audit Bureau</td>
<td>- Accounting audit by the State Audit Bureau</td>
</tr>
<tr>
<td><strong>Dialog and agreements</strong></td>
<td><strong>Dialog and agreements</strong></td>
</tr>
<tr>
<td>- Hierarchical decisions by the Ministry</td>
<td>- Performance contracts based on agreement proposals of the universities and negotiations</td>
</tr>
<tr>
<td><strong>Transparency of decision-making</strong></td>
<td><strong>Transparency of decision-making</strong></td>
</tr>
<tr>
<td>- The ministry prepares the university budget, allocation arguments not open</td>
<td>- A transparent allocation formula</td>
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</table>
How the clarity of the national division of labour between universities and increased diversity of institutional profiles has developed cannot be seen very clearly, yet. Institutional profiles are included in agreements, but they are very much based on proposals of the universities themselves. Universities try to be responsive on demands of their national and regional environments and to start new fields on education instead of specialisation on fewer fields. Unfortunately, the universities do not only compete for being different but also for similar solutions. The responses can be criticised about the lack of innovativeness. However, it is clearly seen that the financial pressure of the recent years has pushed, following the ministerial strategy, universities for cooperation and to establish networks for specific purposes. There are dozens of networks of instruction and research, some financed by the Ministry and some by universities themselves.

There are also indications that efficiency has increased quite dramatically; from 1985 to 2001 the increase in student numbers is 79.4%, in student intake 61.4%, in numbers of teachers 5.4%, in Master's degrees 43.6% and in Doctor's degrees 312%.

After studying the university steering policy, based on the documentary analysis, in Finland in 1980s, we have decided to call it administrative steering because of the strict norms and budget regulations. The steering model developed since the late 1980s and, in particular, in the 1990s, we call managerialistic steering. The core idea in administrative steering was to maintain the welfare state by using the centralised machinery in the implementation of the policy goals. Gradually, in particular during and after the economic recession in the early 1990s, the welfare state had to be re-evaluated and also the universities had to take this into account in developing their management procedures as their responses to the public sector reform, financial cuts in higher education budget, and to an increasing degree, to the accelerating process of market orientation of society. In particular, they had to develop their capacities to deal with regional partners and customers.

The administrative steering was characterised by the belief in control instead of competition trusted by the managerialistic steering. The main focus of interest in administrative steering was means like norms and budget regulations. The Ministry of Education wanted to replace these means with negotiations and result agreements. The transition to another steering culture was a big challenge. The administrative mentality was bureaucratic, which had to be replaced with managerialistic mind. The Ministerial aim was to create responsive state steering mechanisms instead of hierarchically dictating one.
**Performance contracting system**

The main idea of the management-by-results is that the goals set for the institutional activities and the resources needed for their implementation are determined in the negotiations between the Ministry of Education and each university. The financing is allocated to the universities in a lump sum to implement the contract and, in particular, its goals for Master’s and Doctor’s degrees. The budgeting system has been developed to support management-by-results so that most of the goals and appropriations are inter-linked.

The steering process goes as follows:

- The Ministry – university contract will be concluded for three-year periods which means that the target outcomes and the basic grounds for allocating resources are determined for this period. The final sum of annual budget is dependent on the ministerial budget frame, and the financing will be revised annually in a supplementary protocol. Also some smaller elements, like new development projects are agreed upon annually.

- The universities send their proposal for the contract in February to the Ministry. Also the activity and finance plan for the coming three-year period is submitted to the Ministry and it works as a background material for contracting. The Ministry comments the proposals and the universities have a possibility to provide the Ministry with more information if needed.

- Reporting is an important element in steering process. The universities submit an account on the achievement of goals in the form of an annual report. The core of this process in the annual updating of the KOTA database.

- The negotiations will be run in April. Most of the issues have already been agreed in the dialogue run before formal negotiation. Project funds are the most important issue for the universities in this face to face negotiation. Every three years, there is a profound negotiation round for the coming planning and contracting period, and also the degree goals are on the table.

- Unofficial seminars and meetings between the Ministry and university leaders as well as deans and planners will be run before the negotiations. The idea is to introduce both the institutional and disciplinary views and transparency to the negotiations.

- The agreements will be signed after approval of the state budget by the Parliament.

- From the year 2002 onwards the Ministry will provide formal written feedback to the universities on their performance.

The goals determined in the contract include 1) the general goals for the whole higher education system and 2) specific goals for the individual institution in question. lines of education and central objectives.
The general goals set for the university system concern the quality and impact of education and research, the total number of degrees to be awarded and, whenever needed, certain expressions concerning essential policy lines for the contracting period. These have been such as structural development of universities, admission, the role of open university instruction, and so on. The contracts also contain detailed goals for each university, in particular, the target numbers of Master's and Doctoral degrees in each study field, which are central elements in the finance allocation formula. Over the years, the importance of the degree goals has been increased. It is so because they are the most central arguments in the budget allocation formula.

The principle underlying budget preparations are quite transparent and predictability. University funding is determined as three parts: core funds (basic funding), performance based funds and funds for special purposes (project funding). The basic funds cover about 90% of all operational expenditure. Project funding is allocated to the programmes of great national relevance and to institutional development projects, like for the opening a new programme and for improving the institutional facilities. Performance based makes up some 3-5% of the operational expenditure and performance indicators are determined for three-year period.

The basic funding component of the budget is directly based on annual institutional targets for Masters and doctoral degrees, as agreed with the Ministry for each main field of study provided by the university. Target figures are simply multiplied by a field-specific cost factor which is also agreed for the three-year contract period. This means that the basic budget remains stable during the whole three-year period and is subject to changes in the whole national higher education budget. The changeover to this formula budgeting model is being phased in gradually, so that the whole basic funding component will finally be allocated through the formula in 2003.

Performance based funds have been allocated since 1988 and the criteria have been developed gradually. For the moment the criteria are based on the quality of research, the quality of education and university-specific assessment. Quality of research is evaluated on the basis of the centres of excellence in research, funds granted by the Academy of Finland and the other external funding. Quality of education is evaluated on the basis of the centres of excellence in instruction, the centres of excellence of adult education, length of studies, graduate placement and international activities. The achievement of the set targets and the strategic planning in the university make the basis for the university-specific assessment.
Assessment of the steering reform

Many of these goals have been reached, but not all. The whole analysis of the changes is still under preparation by the authors, but it is possible to make some conclusions. They are mainly based on the interviews of the rectors and Administrative Directors of the universities as well as on the survey made to the deans and department heads of the universities.

The universities have now a wide range of autonomy in their daily operations. In particular, this is reflected by the interviews of the academic and administrative leaders of the universities. No one of them would be willing in practice to return to the old steering system. They see that the processes related to institutional planning and funding have simplified remarkably. The institutional leaders feel that the performance negotiations are characterised by trust between the Ministry and universities. They are, however complaining that most of the items to be negotiated have been set already on the first year of the three year period, i.e. when the degree goals for the contract period are agreed upon. On the remaining years, only very minor issues are under genuine discussion. Even most of the projects have been agreed for three years.

In spite of that only minor issues are negotiated, the face to face formal discussion is regarded an important forum for dialogue and higher education policy discussion.

Steering-by-results has quite effectivley supported the institutional profile building and the processes of sharpening the institutional missions of universities. It has pushed the institutions to do that, which is regarded as a positive issue by the institutional leaders. In the long run, these processes seem to lead to internal diversification of institutional missions.

The steering-by-results system has increased competition between universities, but the institutional leaders mainly see that competition has been healthy and improved the functioning of the higher education system and help the development of the system. However, in particular, the representatives of universities in remote regions see that their possibilities to compete with the universities in the capital region are not unbiased. Especially, their opportunities to earn external funding to support the main educational functions are not as good as the opportunities of the institutions in the Helsinki region.

The institutional leaders of the universities in remote regions claim that the regional aspect should be taken into account explicitly in the further development of steering-by-results and the funding formula.

Another cost factor related to the location of the institution is the rental cost. As part of the general public sector reform, the ownership of the
university buildings was transferred from the direct governmental ownership to a semi-private company owned by government. It charges the rent which is equivalent to the market rent. This means that, in particular, that the Helsinki region universities have had difficulties with their rental costs. These regional factors together mean that certain correcting factors have had to be developed into the funding formula. This, however, has decreased the transparency of steering-by-result and funding formula, which is regarded as a problem by the interviewed institutional leaders.

The results show that the management-by-results culture has not reached so effectively the other levels of the institutional organisations, and the deans and heads of departments are not fully internalised the new management model. They are much more sceptical about the role of the Ministry in steering the universities, and although bureaucracy has decreased in many ways within institutions, it is not clear that the universities and their organisational parts have been looking for all the opportunities provided by the Ministerial and steering framework.

To deepen the understanding about the internal responses of universities and to support institutional management development, a new research and evaluation project on four Finnish multidisciplinary universities has been started in spring 2002.

The transfer to a lump sum budgeting was a major reform advancing the financial autonomy of universities in the early 1990s. But the further implementation of the formula funding system has progressed, the more the university leaders have felt that the implementation of degree goals and national development programmes employ an increasing amount of resources, and opposite to the early predictions, the real financial autonomy has decreased. The universities have been put into a competitive situation with other universities, and the maximisation of the degree goals in the negotiations with the Ministry has been the rational strategy for each institution. Consequently, funding per degree has decreased, and “non-earmarked funding” has decreased. On the other hand, as a positive national level consequence, unit costs and productivity of the higher education system has improved as shown earlier.

In addition, the institutional leaders are complaining about the poor possibilities of institutions to enter the marketplace side by side with the commercial organisations without the relaxation of the excessive regulation of financial operations applied to all government organisations.

The institutional leaders clearly see the benefits of deregulation, but they are also worried about the additional reporting to the Ministry. Accountability aspect of the present steering system has got a formal form of reporting, also reporting outside the KOTA database, in particular, reporting about the
national programmes and institutional projects. This employ, in particular, financial and personnel departments of universities.

The steering-by-results system mainly concentrates on quantitative regulation of the university system, and the institutional leaders criticise the model about the lack of qualitative elements in it. According to them, small quality elements in the performance funding component of the funding model is not enough. Quite many interviewed institutional leaders would like to link more closely the national evaluation system to steering-by-results and funding. This is, however, in contradiction with the principles of the evaluation system.

Generally, as the institutional leaders conclude, the evaluation system as a qualitative regulation element, is not effective enough to balance the quantitative bias of the national steering system.

Management-by-results and the programme and project funding component have shown to be effective in the implementation of change within the higher education system and in supporting the integration of higher education policy with more general social and economic policy goals. In particular, higher education and research policy supported very successfully the implementation of the national information society development programme and industrial development in the field of electronics and telecommunication (Hölttä and Malkki, 2000). For example, study places supporting industrial development were increased rapidly in response to the mushrooming demand of qualified labour force by establishing new programmes, expanding the existing ones, and by retraining the degree holders in other field to the experts of electronics. Universities were offered financial carrots, and they did what they were expected to do, but after the programme (and funding) period is over, they have difficulties to integrate these new programmes to their regular activities and to find funding to them by reallocating the existing resources.

The interviews and the survey show very clearly that the values of the academic community in the Finnish higher education system have changed quite profoundly within the last ten years. The result and market orientation have increased and this is widely accepted, in particular, among the institutional leaders. The values of the rest of the academic community are changing, but in a more slow pace. However, the traditional academic values are seen to compose the core values for research and teaching.

Conclusions

The assessment of the steering-by-results approach in governmental steering of universities inevitably raise questions about increasing managerialism and the dominance of money in the co-ordination of the
national higher education system. The direction of change follow the conditions of the New Public Management. The empirical research shows that the steering reform has been quite successful, as assessed by the academic and administrative institutional leaders. Also the productivity of the higher education system has improved. It is, however, clear that the steering system emphasises strongly the quantitative aspects and monetary carrots as the means of steering.

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Management Mechanisms and Financing of Higher Education in Germany

by

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Abstract. The higher education sector has to face competition much in the same way as other economic entities do. Much has been done to introduce reforms making use of economic terms and concepts. This paper will highlight the manner in which different models for financing higher education can contribute to the management of higher education.

The general higher education framework in Germany – which differs from that in other countries – has to be taken into account. Amongst these differences are notably:

- the absence of fees as an instrument for the financing and management of higher education;
- the fact that only a restricted number of students are selected by institutions of higher education. Where student numbers for subjects in great demand are too high, applicants are distributed amongst various universities by a central office.

This paper is divided into four part: (1) an analysis of the German higher education system.; (2) an examination of different management methods relating to a new system of distributing students amongst the different types of institutions (ordinary universities and universities of applied sciences – Fachhochschulen). A discussion of the management of student distribution within a given university follows. (3) In this context, it is recommended to introduce a market-oriented system of tuition fees instead of making provisions for student admission on the basis of available capacity, curricular standards (CNW) and centralized procedures of the distribution of students; (4) conclusions are drawn from these reforms in order to develop systems for performance analysis (management accounting and control).
German universities in transition

In the past few years, the government, politicians, industrial managers and society have strongly criticized German universities (Küpper, 1998). Many shortcomings in education, in research and in the management of universities have been identified. Only a handful of German scientists seem to reach world notoriety and their research is quite often not up to international standards. Furthermore, there is an insufficient exchange of students with other countries.

One important reason for this criticism may lie in the unification of Europe and globalisation since the fall of communism. Society recognizes that there is worldwide competition not only in an economic sense but also between universities. People are discovering the importance of higher education and the excellence of research, and they are beginning to consider science to be the basis of national prosperity in the future.

While the “student revolution” of the 1960s strengthened the democratic structure of today’s universities, economic ideas and concepts are now coming to the fore. In the 1970s, the inclusion of students’ representatives on university and faculty boards became important. The organizational structure of universities was changed. In recent years however, the influence of these boards has been reduced so that the chancellors and deans of universities have regained much more power (Fandel, 1998). Overall, universities will become more efficient and rate higher on an international competition scale. Economic ideas of competition and the instruments of economic management are therefore becoming more important. Today, the mechanisms of management and finance of the whole German higher education system are more than ever on the agenda.

In this paper, I will develop the ways in which models of financing higher education can contribute to its management. This will be done in four parts 1) an analysis of the German higher education system, 2) an examination of different management methods relating to a new system of distributing students amongst the different types of institutions (ordinary universities and universities of applied sciences – Fachhochschulen). The management of student distribution within a given university is then discussed. 3) In this context, it is recommended to introduce a market-oriented system of tuition fees instead of making provisions for student admission on the basis of available capacity, curricular standards (CNW) and centralized procedures for
the distribution of students; (4) conclusions are drawn from these reforms in order to develop systems performance analysis (management accounting and control).

Problems and failures of the contemporary system of higher education in Germany

**Framework and deficiencies of the contemporary system of higher education**

The vigorous criticism German universities undergo needs to be moderated considering the great challenges they have had to face over the last thirty years. Thus, the number of students doubled between 1970 and 1990, while financial and other resources provided by the government did not rise in proportion, but remained constant. Nevertheless, the teaching quality in most departments remained high and most German students are successful if they go abroad. I believe that the shortfalls of German universities do not primarily lie in teaching but in research. Many German scientists have little international contact. They are not frequently present at international conferences and their publications are not represented enough in highly ranked international journals. Some of the best young scientists move to the United States and do not return.

Even if German universities do not receive enough funding, the central problem of the university system does not lie in financial but in structural deficiencies. There are several important parameters which undermine the competitiveness of German universities, which differ from those of other countries:

- the absence of fees as an instrument towards the financing and management of higher education
- the fact that only a restricted number of students are selected by the universities themselves. Where numbers of students for subjects in great demand are too high, they are distributed amongst various universities by a central office for the allocation of study places throughout the country
- the number of students to be trained by a faculty is calculated via a formula fixed by capacity regulations. This does not necessarily correspond to the space and equipment available and it can only be changed following an arduous political process
- the fact that – based on the constitutionally guaranteed free choice of training institution – students can take legal action for admission
- the courts often rule against universities; one court even judged that universities must not fix an “inadmissible educational level”.
Parameters and objectives for improvement

In the last few years, many universities and departments have tried to improve their teaching in various ways. They have set up introductory courses in learning techniques that are needed by students and strengthened student consultation and course guidance. Methods and procedures for the evaluation of courses, subjects, faculties and universities have been introduced (Harnier et al. 1998). In many disciplines and faculties, the examination system has been changed into a credit point system. Over the past few years, some departments have introduced bachelor as well as master courses in addition to, or instead of, the “Diplom”. I think that these improvements are important – but they are not sufficient. The German higher education system needs strategic changes to reach the level of competitiveness demanded by politicians, economic managers and others.

Therefore, it is essential that core parameters of the German higher education system and framework be changed. The most important ones seem to be:

● Universities must have the right to select their students themselves.
● All students must have the chance to select a university.
● This would mean that the system of central distribution of students for the disciplines in great demand would have to be abolished, at least in some subjects, such as business administration.
● The ratio between the number of students and the number of faculty staff, especially professors, must be reduced to improve education for those with high potential.
● Universities must differentiate their teaching to a greater extent.
● Universities must be more autonomous. The organizational principle of subsidiarity could be followed; universities should decide without government influence more frequently. They would gain more responsibility in the process. This necessitates and justifies the development of efficient controlling and performance-measuring instruments for universities.
● The management of universities must be more efficient. They need to be headed by professionals.

At present, I see an opportunity to realize at least some of these objectives. Many people in Germany are aware that the higher education system needs change, since it influences know-how which is the most important, and perhaps the only, resource for German competitiveness in the globalisation process. From my point of view, there are two central means of reaching this goal: changing the distribution of students amongst different institutions of higher education and installing new mechanisms of
management and control within universities. In both of these, the financial aspect plays a prominent role. Before analysing these two means of change, we have to look at the core dimensions and levels of the German higher education system.

Core elements for managing the higher education system

Important aspects of management mechanisms

The deficiencies of the German higher education system make it clear that we need other mechanisms to manage and control it. In the economic sciences, we know that different mechanisms coordinate the demands, activities and decisions of different units on a global level, within a national economy or within a firm. I think that some aspects of this are transferable to social systems. Therefore, it is appropriate to describe and analyze the higher education system. The most important aspects of these management mechanisms are (Küpper, 2001a):

- the organizational structure;
- the mechanisms of planning and control;
- the incentive system;
- the information systems;
- the coordination mechanisms.

The organizational structure is characterized by the distribution of tasks and responsibilities which determine the hierarchical system of an institution. The processes of planning and control are determined by the centralization or decentralization of decisions and the number as well as the type of inspections. Incentives can be monetary and non-monetary. Within universities, non-monetary incentives, like time for research, free choice of research issues, reputation and so on, are important besides monetary aspects such as salary, personnel and asset resources etc.

One can characterize different management mechanisms for economic and social systems with these criteria (Figure 1). There are two extreme types: on the one hand, we find centralized coordination systems. In such systems, many decisions are centralized and the system thus has many aspects of a planned economy. On the other hand, there are decentralized systems. Here we find some market elements, where activities are determined by market demand. Between these two ends of the spectrum, we can find several mixed types. Until now, the German higher education system had many aspects of a centralized system, e.g. the absence of fees, the central allocation of a number of students to the universities and the centralized mechanisms to distribute resources.
Levels of management in the higher education system

The higher education system is ruled by many regulations and political decisions, referring back to different institutions and persons. In Germany, we have to distinguish between at least three levels within the whole system (Figure 2):

- the types of institutions for higher education;
- the different institutions within each type;
- the departments within each of these institutions.

The structure of the higher education system is determined by law and politics. In Germany, scientific universities and universities of applied sciences (Fachhochschulen) are two different types of universities with quite different management mechanisms and financing.
different legal status, tasks, rules of admission and types of professors. Scientific universities are more theoretical and universities of applied sciences are more practically oriented. Until now, professorship at a scientific university required not only a doctoral degree but also a postdoctoral qualification (Habilitation). This postdoctoral qualification will be changed in future, but the scientific demands will remain, e.g. several papers in highly ranked scientific journals. Several years of practical experience besides the doctorate are also a prerequisite for a professorship at a university of applied sciences. In some regions (Länder), especially in Baden-Württemberg, several business academies were set up after 1975 (Wissenschaftsrat, 1994; Zabeck/Zimmermann, 1995). They combine academic with practical education. Their students are trained at the academy for six months and work in a company such as Daimler, IBM, Bosch, etc., for the rest of the year. The course of study lasts three years and is completed with a diploma which is rated on a level with the diploma of a university.

Management mechanisms within different types of higher education institutions

Current problems of the management mechanisms

One of the German higher education system’s most important problems is the distribution of students across the different types of institutions. In Germany the proportion of young people who wish to attend a university is not higher than in other countries such as France, the United Kingdom or the USA. Nevertheless, we have in many disciplines the worst ratio between the number of applicants and the number of student places available at scientific universities. The reason for this shortcoming lies in the distribution of students within different types of academic institutions. Today, most students attend a scientific university, while the rest attend a university of applied sciences or a business academy (which exist only in a few German regions, Länder. The allocation is determined by a central system designed to determine the places at a university, i.e. by the so-called “curricular standard CNW”. For example, for business administration, this CNW is 1.9 for scientific universities and 5.4 for universities of applied sciences (Table 1). This means that a scientific university has to accept nearly three times as many students as a university of applied sciences.

As a consequence, most of Germany’s scientific universities suffer from overload, whereas some universities of applied sciences lack students. The allocation of students to both types of academic institutions in Germany in the 1990s, in 1995 and 2000, is shown in Figure 3 (Bundesministerium für Bildung und Forschung 2000/2001). At scientific universities, many lectures are attended by 200 to 1000 students. At universities of applied sciences and business academies however, small classes of 20 to 30 students are common. I think that this is one reason why some young people first apply to an academy or a highly
ranked university of applied sciences, whilst accepting a place at a scientific university only if they do not succeed in getting a place in one of these primarily favoured institutions. The training at scientific universities may be efficient economically, but it is not appropriate for developing high potential in sciences.

In some disciplines such as business administration and engineering, business academies take in a significant number of students, but only in a few German regions. Figure 4 shows that in Baden-Württemberg (Statistisches

Table 1. **Curricular standards for selected study courses with admission restrictions**

<table>
<thead>
<tr>
<th>Degree course</th>
<th>Scientific university</th>
<th>University of applied sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture</td>
<td>4.8</td>
<td>7.3</td>
</tr>
<tr>
<td>Civil engineering</td>
<td>4.2</td>
<td>6.4</td>
</tr>
<tr>
<td>Business administration</td>
<td>1.9</td>
<td>5.4</td>
</tr>
<tr>
<td>Electrotechnology</td>
<td>4.2</td>
<td>6.4</td>
</tr>
<tr>
<td>Computer science</td>
<td>3.6</td>
<td>6.2</td>
</tr>
<tr>
<td>Mechanical engineering</td>
<td>4.2</td>
<td>6.4</td>
</tr>
<tr>
<td>Industrial engineering</td>
<td>2.0</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Figure 3. **First year students, students and graduates of universities and universities of applied sciences**

Source: Author.
Landesamt Baden-Württemberg, 2001) an increasing number of graduates come from this region.

Advantages of a market-oriented system for fees

The distribution of students within different types of academic institutions seems to be one of the central problems of the German system. Changing this allocation system will take a long time. Therefore, one cannot be optimistic at this point. The distribution within one type of institution, especially scientific universities, could be improved over a shorter time. In my opinion, the introduction of a market-oriented system of fees could be an efficient instrument to realize several of the objectives mentioned above.

In Germany, important political groups and their official representatives are explicitly against the introduction of fees. The German SPD based government prohibited tuition fees for the first academic year of study and had this prohibition codified in the legal framework for higher education. But it is not clear if this paragraph will withstand the Federal Constitutional Court and future elections in Germany. Therefore, it is worthwhile to analyze the
arguments and potential sources of fees. I personally believe that we will progressively introduce fees in Germany in the years to come.

In economics, one can demonstrate that supply and demand is regulated much more efficiently through the existence of markets than by centralized planning systems. This argument also holds for universities. The absence of fees accounts for many shortfalls and undesirable developments. For example, it does not ensure that young people of the lower social classes have access to university in the same way as offspring of upper-class parents. In Germany, their share has continually declined over the last 20 years (Schnitzer et al. 2000). As more students come from the upper classes, this means that the lower classes actually finance free studies for the upper-class students via taxation, as several scientific studies show (Grüske, 1994; Grüske, 2002). Therefore, one can say that the withdrawal of tuition fees is antisocial.

The central argument for fees lies in their function as a parameter for matching supply and demand for higher education in the same way as the pricing of goods within a market. For this reason, in my opinion, one should avoid using them as an instrument for institutional financing. Fees can be effective in three ways:

- They regulate demand with the supply of education within the different disciplines at different universities.
- They motivate the students to study. If students pay fees, they will use institutions of higher education more efficiently and reduce the duration of study, as is evident in several countries.
- Like a market price, they give information on the value of a course of study, its characteristics and quality.

In order to fulfil these three functions, fees must vary according to subjects and universities. Thus, fees must be the result of a decentralized (market-oriented) decision process. They must not be determined by a central body. Universities, and especially their faculties, must earn the right to decide upon their own level of fees. If a faculty is attractive to students, if its training provides a sound basis for a profession, if its quality and scientific standards meet the demands of students, then such a faculty can request high fees. On the other hand, if available places are not filled in a given faculty, its professors are made aware that they must adapt their teaching (to attract more students) or reduce fees.

In order to use a fee system as a regulatory mechanism and not for the pure financing of universities, it is necessary to allocate at least part of the public funds dedicated to education directly to registered students to cover their fees. One possible way of doing this is that applicants who obtain the right to study on the basis of a relevant higher education entrance qualification (“Abitur”) is awarded a “virtual study voucher”. This voucher
would provide the right to study without fees and could only be used for this. It would differ according to the type of course so that those admitted for study at scientific universities would be awarded a higher amount to pay the higher fee. The amount of the voucher should not necessarily be sufficient to finance a complete period of study. Thus, while it could be fixed high enough to cover a short study period at a business academy or a university of applied sciences in a discipline with low fees, it could be lower than that necessary to finance a more attractive course with high student demand and high costs.

Two further aspects of the financing of universities seem to be important. Firstly, universities need to receive further funds from the government to ensure the fulfilment of their primary mandate, regardless of the type and the number of their students. Such direct financing by the state would provide support to areas such as research, which does not depend on student numbers, or to promote disciplines which are relevant for society but do not attract high student demand. Thus, universities must have different sources to finance their budget:

- a basic allocation of funds from the government;
- fees from their students;
- third-party funded research;
- fund-raising from industry and private persons;
- donations from alumni, etc.

Secondly, there is a need for an effective system supporting students financially by virtual study vouchers (as discussed previously), monetary grants given by universities, by government, private persons, alumni etc., together with loans from banks, guaranteed by the government or a university. It is important that there be an effective system of scholarships so that all qualifying young people have the chance to attend higher education. One prior objective has to be that more students come from the lower classes. The social component of such a system will be crucial for its acceptance in society.

The motivating, information and coordinating functions of a fee-based system is necessary to manage higher education today in a much more effective and efficient way. At the same time, this must not be done at the expense of the lower social classes. On the contrary, a system of financing students and of scholarships needs to be set up that leads to a situation where more people with university degrees come from the lower classes than at present.

**Management mechanisms within the universities**

**Controlling systems for universities**

A key element for improving the effectiveness of the German system of higher education is to focus on the management system of the university
system itself. In the past, German universities have been directed to a high degree by public ministries and government, both local and national, from which they receive most of their money. Their expenses were fixed by the public budget, voted by parliament, so that government influence (Ministries of Education and Finance, Parliament) has been very high. Thus, management mechanisms have necessarily involved a high degree of centralization and bureaucracy.

More recently, we are noticing a tendency to increase the autonomy of the universities in several German regions. Their budget is being progressively separated from the national budget, and universities will eventually be given their own global budget. Within this budget they can decide autonomously on the distribution of the assigned resources, without approval by the ministry. The reverse side of autonomy must be an increasing responsibility, for which universities need other management tools. But instead of bureaucratic instruments, modern instruments to control the use of assets and financial funding need to be set up. In this situation one can learn a lot from experiences in the private enterprise, where output and goal-oriented budgeting is used to regulate divisions and subsidiaries possessing a high degree of autonomy. A result of this is that decisions are taken by the entities which are best equipped to do this from an information point of view. This is the root of the principle of subsidiarity. Figure 5 shows different coordinating mechanisms with their respective characteristics relevant for the management of universities (Küpper 2001a, Küpper/Sinz 1998).

Today especially, output-oriented budgeting systems based on different performance measures, such as the number of students and graduates, the number of diplomas awarded, third-party funds collected, etc., are being discussed and set up. Furthermore, the distribution of funds on the basis of target agreements is becoming more and more important. In order to justify such methods of budgeting and to monitor whether targets are met, one needs performance measures. All these mechanisms tend to be more market-oriented than the bureaucratic budgeting mechanisms practiced until now.

**Accounting as an important part of the university management system**

In order to use such management mechanisms, the universities have to set up effective information systems. In practice, financial and cost accounting are the central information systems of most companies. Thus is being intensively discussed in Germany whether standard private sector methods of bookkeeping, involving financial and cost accounting with balance sheet and income statements, can be transferred to universities (Küpper, 2000). It is believed by some that universities will work more efficiently if they use such accounting systems.
The principal objective of private sector companies is to make a reasonable profit and to increase their shareholder value. This target determines the structure of the information system of financial accounting as well as managerial accounting. On the other hand, profit making is not an objective in higher education, so that one cannot apply private sector financial and managerial accounting systems to universities without modification. While efficiency is one of their objectives, this is to be achieved within a non-profit making context.

Although public universities are non-profit organisations, their economic weight is substantial. They control a budget which is large in monetary terms, financed by government, fees, fund-raising and other sources. To manage their expenses they need a sophisticated accounting system. As the central goals of universities are non-profit making, universities need to develop financial and cost accounting systems which differ from those systems

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**Figure 5. Important characteristics of comprehensive coordination systems**

<table>
<thead>
<tr>
<th>Centralized bureaucratic systems</th>
<th>Budgeting</th>
<th>Target system</th>
<th>Market elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisation</td>
<td>input-oriented</td>
<td>output-oriented</td>
<td>key figures</td>
</tr>
<tr>
<td>• hierarchic</td>
<td>• budgeting</td>
<td>• participation</td>
<td>• selection of students and assistants</td>
</tr>
<tr>
<td>Planning</td>
<td>structural planning</td>
<td>structural planning</td>
<td>structural planning</td>
</tr>
<tr>
<td>• structural planning</td>
<td>• structural planning</td>
<td>• participation</td>
<td>• decentralization</td>
</tr>
<tr>
<td>• top-down planning</td>
<td>• external audit</td>
<td>• performance</td>
<td>• attractivity:</td>
</tr>
<tr>
<td>Control</td>
<td>• compliance with the budget</td>
<td>• performance</td>
<td>• student applicants, third-party funded projects</td>
</tr>
<tr>
<td>• external audit</td>
<td>• external audit</td>
<td>• compliance with the budget</td>
<td>• external audit</td>
</tr>
<tr>
<td>Incentive system</td>
<td>• calls</td>
<td>• performance</td>
<td>• calls</td>
</tr>
<tr>
<td>• third-party funded projects</td>
<td>• third-party funded projects</td>
<td>• performance-based allocation of resources</td>
<td>• third-party funded projects</td>
</tr>
<tr>
<td>Information system</td>
<td>• cameralistic accountancy</td>
<td>• finance, activity and costs accounting</td>
<td>• benchmark universities</td>
</tr>
<tr>
<td>• cameralistic accountancy</td>
<td>• teaching load</td>
<td>• financial performance</td>
<td>• evaluations</td>
</tr>
<tr>
<td></td>
<td>• scientific performance</td>
<td>• resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• finance, activity and costs accounting</td>
<td>• indicators</td>
<td></td>
</tr>
</tbody>
</table>
applied in the profit sector (Küpper, 2000; Küpper, 2001b) and which are adapted to their primary objective. To use traditional accounting systems unchanged could become dangerous for them.

The basis of their financial accounting system has to be a cash flow statement to reveal the flow of capital that they receive from the government and other funding sources. In a public university, a balance sheet can describe and classify its existing assets particularly well. As the liabilities of such universities are often not high, they are not at present of great interest. As long as universities do not offer the results of their activities in teaching and research on a free market and as they do not aim at making a profit, an income statement is of no value and could be misleading. Instead, it could be useful to show the changes of net asset values over time. Thus, the financial accounting system of a university may consist of three types of document (Figure 6): a cash flow statement, a balance sheet and a statement of net value changes of assets employed. Such a system would be used as a basic tool to review the financial performance of a university by auditors and by the government.

To support decision-making, universities also need a form of cost accounting system (Küpper, 2002). The main problem in setting up such a system is the lack of market-based sales revenues, since most of the revenues arise from government funding. However, the problem of allocation of public funds to activities in teaching, research and services cannot be solved without

Figure 6. **Components of a financial accounting system for public universities**

(CA = changes of the assets; ES = expense surplus)

![Financial accounting system for universities](chart.png)

Source: Author.
some degree of arbitrariness. For this reason, any university performance monitoring system should show the monetary expenses and costs of input on the one side, and the non-monetary output in teaching, research and service processes on the other (Figure 7). Performance indicators can be developed by the use of ratios of output measures to monetary (or non-monetary) input measures. As universities undertake different types of activities and pursue different goals in teaching, research and services, it makes no sense to rate their performance by only one key figure. These performance measures are calculated in a third part of this internal accounting system.

In Germany, universities chancellors attempt to classify expenses and costs, revenues and non-monetary measures of university output in a uniform way in order to make comparisons possible (AK Hochschulrechnungswesen, 1999; Kronthaler, 1999). The most important current expenses and costs relate to the input of material, external services, labour, information, fees, capital etc. These are complemented by expenses for investments in buildings, machines, computers, etc. Table 2 gives a classification of important output measures in teaching and study, research and services, and Table 3 shows some examples of performance indicators of universities.

Performance indicators need to be recorded for the whole university. In order to make evaluations, they have to be compared with other universities as benchmarks. For this reason, the chancellors of the German scientific universities suggest publishing performance statements. A proposal for this is shown in Figure 8.
Important decisions in the university sector are time-consuming and the time taken to reach them is long. Since they relate to investments in assets and personnel, annual or similar periodic measures cannot show the performance and the success of such long-term activities, nor their potential, in a satisfactory manner. Strategic accounting systems need to be set up alongside the periodic systems. A central task of future research in higher

### Table 2. Classification of university output measures

<table>
<thead>
<tr>
<th>Academic studies and teaching</th>
<th>Research</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Places in higher education</td>
<td>Promotion of scientific graduates</td>
<td>Libraries</td>
</tr>
<tr>
<td></td>
<td>Post-graduate studies courses</td>
<td>Acquisitions</td>
</tr>
<tr>
<td>First-year students</td>
<td>Doctorates</td>
<td>Users</td>
</tr>
<tr>
<td>Undergraduate students</td>
<td>Habilitations</td>
<td></td>
</tr>
<tr>
<td>Graduate students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student dropout</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of courses</td>
<td>Utilisation of scientific results</td>
<td>Personnel administration</td>
</tr>
<tr>
<td>Course hours</td>
<td>Scientific publications</td>
<td>Attended persons</td>
</tr>
<tr>
<td>Tests</td>
<td>Third-party funds from</td>
<td></td>
</tr>
<tr>
<td>Tests in undergraduate studies</td>
<td>Industry</td>
<td>Student administration</td>
</tr>
<tr>
<td>Tests in graduate studies</td>
<td>Public institutions</td>
<td>Finance administration</td>
</tr>
<tr>
<td>Graduates</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 3. Classification and examples of university performance measures

<table>
<thead>
<tr>
<th>Academic studies and teaching</th>
<th>Research</th>
<th>Promotion of scientific novices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicants per place at university</td>
<td>Publications per professor</td>
<td>Postgraduate students per professor</td>
</tr>
<tr>
<td>Applicants per student in first semester</td>
<td>Publications per academic staff</td>
<td>Postgraduate students per graduates</td>
</tr>
<tr>
<td>Students per professor</td>
<td>Third-party funds per professor</td>
<td>Number of doctorates per professor</td>
</tr>
<tr>
<td>Number of tests per professor</td>
<td>Third-party funds per academic</td>
<td>Average length of doctoral studies</td>
</tr>
<tr>
<td>Graduation rate (based on number of first-year students)</td>
<td>Staff</td>
<td>Habilitations per professor</td>
</tr>
<tr>
<td></td>
<td>Scientific award per academic staff</td>
<td>Average length of habilitation</td>
</tr>
<tr>
<td>Graduates per professor</td>
<td>Patents per academic staff</td>
<td></td>
</tr>
<tr>
<td>Average duration of studies per degree programme</td>
<td></td>
<td>Service</td>
</tr>
<tr>
<td>Average age of graduates</td>
<td></td>
<td>Library:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acquisition of books per staff member in library</td>
</tr>
</tbody>
</table>

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education is to develop instruments to measure intellectual capital (Edvinsson/Malone, 1997; Roos et al., 1997) which is a most important component and an essential characteristic of universities.

In Germany, different attempts to introduce new accounting systems in universities are currently taking place. In several counties, such as Lower-Saxony (Niedersachsen), the application of the legally codified system of economic accounting (HGB) is being tried. The results show that this system is not appropriate for universities. As a result, a commission composed of German university chancellors recommended developing a special accounting system based on the ideas outlined in this paper. One problem is that standard
Software systems available have been set up for private sector accounting. For this reason, it is necessary to adapt these systems for use in universities. There exist various projects, e.g. at the Technical University of Munich and at the HIS GmbH (Hochschul-Informations-System GmbH), designed to develop suitable software systems for university accounting. In a further Bavarian project, a data warehouse system has been developed which will be important to obtain the data for a periodic performance system (Sinz et. al, 2001). There is thus a good prospect for the development of a university-specific accounting system necessary to manage universities in an efficient manner.

Conclusions

The reform of the system of higher education in Germany began later than in other countries such as the Netherlands. However, for several years there has been strong pressure from industry, politicians and society to improve its effectiveness and the efficiency. It has taken a long time to initiate these processes and much change is necessary. Those at universities, professors as well as most students, have shown resistance to such reforms. Nevertheless, as the discussions developed and better insights into the problem have been obtained, there has arisen increased willingness to change the framework and to set up modern management mechanisms. New laws in several regions (Länder) of the Federal Republic of Germany, the activities of the presidents and chancellors of German universities, as well as changing attitudes within faculties, give reason to hope that major changes in the German system of higher education will take place. I believe that many universities, as well as the entire system of university management mechanisms, will undergo radical change in the coming years. Perhaps one will be astonished at the flexibility of a formerly complacent system.

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Sticks and Carrots: The Effectiveness of Government Policy on Higher Education in England Since 1979

by

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Abstract. This article will look at some of the key objectives of Government policy in the UK over the last 20 years, including increasing efficiency and accountability, expansion of student numbers, selectivity in research funding, regionalisation, widening participation, wealth creation and increasing contributions to the quality of life, and at the various measures used to implement such policy. It will contrast the use of “sticks” (i.e. incentives to deliver desired outcomes), and will consider which have been more successful in achieving the goals of Government policy.

The article will also address the implications of such tools of policy on the freedom and autonomy of individual institutions and on diversity within the higher education system. It will consider the role of Government policy in shaping higher education, as compared with other forces for change, including shifting patterns of student demand, rapid developments in technology and methods of learning, new patterns of research and innovation, and the internationalisation of higher education.
The year 1979 and the election of Margaret Thatcher as Prime Minister represented a major watershed in the history of English higher education. The 1980s and 1990s were marked by a series of changes which rocked the world of higher education and which transformed academic life and the student experience; an age had passed, never to be re-created.

Before 1979, English higher education was characterised by low participation rates and high institutional autonomy. Government funding was channelled through the University Grants Committee (UGC) which exercised a high level of discretion in its distribution, sometimes referred to as “informed prejudice” (Scott, 2001). Within institutions, professional managers, whilst always present, were held in check by what Halsey referred to as “donnish dominion” (Halsey, 1992). Institutions retained freedom in the allocation of resources and the universities retained their independent regulation of quality and standards in both teaching and research.

To many academic staff, the period before 1979 is still regarded as a “golden age” for English higher education. This impression can be questioned in detail and certainly is a view which is enhanced by the warm glow of hindsight. It is also a “university view” of the world rather than reflecting the whole of higher education, including the former polytechnic sector. Nevertheless, the period since 1979 has witnessed radical changes in higher education. Student numbers have increased dramatically and participation rates now stand at over 33%; a mass higher education system has been created, with Government now aspiring to move to 50% participation for the age group 18-30 years. New instruments of accountability and audit have been introduced; dependence on Government funding has reduced, often dramatically, with increasing diversity of funding sources and the emergence of an entrepreneurial approach; and new approaches to management have been established, both at system-wide level through the growing interventionist approach of Government and within institutions, often exemplified by formulaic resource allocation and performance-based funding.

How has this transformation been achieved? In the 1960s and 1970s the concept of a Government policy towards higher education was barely recognised and rarely articulated; Kogan and Hanney comment that until 1981, “there was very little government policy for higher education” (Kogan and Hannay, 1999). Today, less than 30 years on, Government exercises
huge (and increasing?) influence over the higher education system, shaping priorities and new developments in a way not foreseen before 1979. With a mass higher education system has come increasing public interest and potential electoral consequences. The contribution of higher education to society and to the economy is now acknowledged. Higher education has now acquired a political importance which demands Government involvement. Higher education is now too important to leave to practitioners alone. How is this influence expressed in practice? Ingram and Schneider note “that public policy almost always attempts to get people to do things they might not otherwise do; or it enables people to do things they might not have done otherwise” (Ingram and Schneider, 1990). Put another way, Government policy works through a combination of “sticks” (i.e. sanctions when actions are not forthcoming or are not fulfilled adequately) and “carrots” (i.e. incentives to deliver desired outcomes). This paper will look at the use of these two contrasting approaches. Which has been more successful in achieving its objectives? What have been the effects of such tools of policy on the freedom of individual institutions and on diversity within the higher education system?

Following the taxonomy outlined by Ingram and Schneider and applied by Bleikle (2002), there are in practice two forms of “stick” which may be applied to higher education: authority tools which are requirements imposed through the legal authority of Government, either demanding actions or prohibiting specified steps, and capacity tools through which resources are provided to deliver required outcomes, normally in terms of student numbers.

Authority tools are less prevalent in England than in many other countries where higher education is controlled directly by Government and where academic staff are effectively employed as civil servants. Universities have retained considerable independence, free to acquire and dispose of their own assets, including land and buildings, to raise and retain non-Government funds, and to employ staff. Indeed, successive governments have repeatedly emphasised the freedom of institutions to pursue their own missions determined by and within the institutions themselves. Nevertheless, there are three key examples where authority tools have been applied either to effect fundamental change or to resolve particularly contentious issues:

- From 1965, English higher education was a binary system, comprising the universities (“the autonomous sector”) and the polytechnics (“the public sector”). However, in 1992, through legislation, a unitary system was created, with the former polytechnics granted degree awarding powers. At the same time, the UK wide system of higher education which had existed hitherto was dismantled and replaced by separate funding bodies for Scotland and Wales. Significantly, these new funding councils were not established as planning bodies and were not to function as the “buffer”
between institutions and Government as had been undertaken by the former UGC and to a lesser extent the short-lived Universities Funding Council (UFC); a potential hurdle in the way of Government policy had been removed. Moreover, the new funding bodies included significant representation from outside the world of higher education, reducing the scope for higher education to determine its own destiny isolated from Government direction.

- Until 1998, the majority of academic staff in universities enjoyed tenure and could only be dismissed for “good cause”, normally defined as gross misconduct, incompetence or incapacity. Dismissal linked with redundancy, possibly arising from financial constraints or academic restructuring could not be undertaken. Academic staff guarded such privilege with vigour and commonly drew a link between tenure and academic freedom in both teaching and research. However, to Government and to some of the emerging cadre of university managers tenure represented an obstacle to the effective running of institutions and had to be removed. Thus, the Education Reform Act of 1988 provided that any member of the academic staff appointed or promoted on or after 20 November 1987 would not have tenure.

- Throughout the period since 1979, debate has continued about the whole basis for the funding of higher education; essentially, this is a question of who pays for the dramatic increase in student numbers. Various options have been proposed against a background of growing public sensitivity. For many years, tuition fees for the majority of UK based students had been paid through mandatory awards from local education authorities. However, since 1998, aware of the pressures on the public purse of increasing student numbers, Government legislation has required students to pay fees subject to an income-related assessment. A flat rate fee has been introduced for all full-time undergraduate courses, irrespective of subject area. This has proved highly contentious representing a major departure from the concept of “free” education. At the same time, conscious that several universities sought the freedom to set their own fees or wished to introduce their own fee supplements (“top-up fees”), Government also acted to restrict the freedom of institutions to determine their own fees for UK undergraduates. The debate on fees and on other related aspects of student funding continues and further legislation will almost certainly follow in due course.

Authority tools have therefore been applied in order to resolve particularly difficult issues or to implement major changes. In each case, it is doubtful whether any other form of policy instrument could have succeeded.

Interestingly, it is also apparent that the mere threat of the possible introduction of authority tools can in itself be a mechanism for change. An
example of this relates to the development of procedures for quality assurance and assessment. In the late 1980s, concern grew in Government about the ability of universities to self-regulate their quality and standards. The spectre of an external agency charged by the Government with responsibilities in this area became a major stimulus for the universities in establishing new structures for the monitoring of teaching, leading in due course to the formation of the Quality Assurance Agency (QAA); moreover, the threat of such external intervention in the running of institutions was one reason why other policy developments in the late 1980s, including the end of the binary system, were implemented with so little debate or dispute.

The use of formal regulation in order to execute Government policy in higher education in England, whilst important, has been used sparingly. More common is the second form of “stick”, the capacity tool. Two important examples may be cited:

- Since 1979 a key element within Government policy has been increasing student numbers accompanied by enhanced efficiency; reductions in the unit of resource per student have become familiar throughout the period, beginning with the severe cutbacks imposed in 1981 but continued thereafter under the guise of efficiency gains. Thus, in the late 1980s and early 1990s, funding formulae were developed and implemented by the funding agencies which both required growth in student numbers and reduced unit funding. Institutions could not opt out by cutting numbers in order to maintain the unit of resource, nor was it possible to stand still; the formulae would penalise institutions which failed to expand numbers but at the same time worked to reduce the overall resource per student. As a tool of Government policy, it is hard to imagine a more successful device which delivered a massive increase in student numbers and an on-going reduction in the unit of resource. Indeed, the tool was so successful that, in the mid 1990s, the growth in numbers had to be halted before further expansion began in the late 1990s.

- Closely associated with this aspect of Government policy is increasing transparency in the allocation of funds to universities. In theory, the concept of a block grant for use at the discretion of individual institutions has been maintained. However, in practice, transparency tends to promote the use of income-led resource allocation models and often reduces the room for manoeuvre of universities in the determination of their own resource allocation. At the very least, it places an onus on managers to justify movement away from the income-driven model. In this way, the provision of information in a particular form has tended to reinforce the application of Government policy.
As a stick with which to implement Government policy, the capacity tool can be extremely effective. The key is to ensure that institutions have little choice but to comply with the formula and thereby to achieve the desired policy goals. In this way, the capacity tool differs from incentive tools, which provide funding for specific activities but which are, crucially, optional in nature and therefore may be seen as a “carrot” rather than as a “stick”. However, it is also important to understand that capacity tools may have further indirect effects which may also be used to implement Government policy. As well as seeking to reduce the unit of resource per student, Government since 1979 has been keen to encourage higher education institutions to generate additional income from other non-Government sources. By imposing recurring efficiency gains and reducing the certainty and predictability of Government support, universities were forced to follow Government policy; examples include the recruitment of full fee paying international students, the increased recovery of overheads on research contracts; the exploitation of university facilities and assets; and the expansion of other income generating activities. For Government, the capacity tool served to encourage universities to look for alternative sources of income; for institutions, the incentive was to replace “lost” Government income and to reduce their dependence on Government funding. As a policy tool, it has been an outstanding success; to varying degrees but without exception universities have diversified their funding base.

Taken together, authority and capacity tools have been crucial in shaping English higher education since 1979. Government has become increasingly aware of the power of these tools as levers with which to influence the higher education system. Once the capacity and “know-how” has been established, it is often difficult for Government to resist the temptation to intervene in the allocation of public funds and in the achievement of policy objectives. It is doubtful, however, that universities, given a free hand, would have delivered on Government policy with such success on a voluntary basis without the imposition of, or the threat of, some forms of penalty. How does this compare with the alternative approach of introducing optional incentives or “carrots”? There are three forms of “carrot”: incentive tools, which rely on reward mechanisms, positive or negative, to induce compliance; symbolic and hortatory tools which assume that people are motivated whether or not to take policy-related actions on the basis of their beliefs and values; and learning tools which assume that institutions and individuals implement policy on the basis of experience and problem-solving.

Incentive tools are familiar in higher education. Academic staff are encouraged to seek funding on a competitive basis for research; promotion and salary enhancement are used as incentives for enhanced staff performance; and good student performance is rewarded by higher grades and
better degree results. However, as Ivar Bleiklie notes, incentive tools were not traditionally seen as policy tools but rather as tools “that were integral to the academic community and were used to cater to its internal concern with maintaining academic quality” (Clark, 1998). However, from the 1980s Government began to use incentives as an instrument for the implementation of policy, either directly or through the medium of funding bodies. There are several clear examples:

- A key feature of Government policy since the mid 1980s has been the selective allocation of Government funds for research, to increase overall research output, to strengthen leading researchers and research groups, and to move away from the “black hole” of research funding which existed hitherto by increasing accountability. This policy led to the Research Selectivity Exercise in 1986 and to subsequent Research Assessment Exercises (RAE). Ratings given by unit of assessment (subject) are used to determine funding, with a series of weightings to favour the highest rated departments; the lower ratings are zero weighted and therefore receive no funding. A clear incentive is given to improve overall research quality and output. The extent to which individual institutions respond to this incentive (including the numbers and proportion of staff returned for assessment) depends on the mission and motivation of universities and their staff; in this way, the RAE represents a “carrot” for the concentration of research funding in the “best” departments.

Since its inception, the RAE has been highly controversial within English higher education. Many criticisms have been levelled at the RAE: the obsessive behaviour of some institutions and staff; the alleged distortion of research activity; issues of quantity as well as quality; the treatment of highly innovative or multi-disciplinary research; the “transfer market” created for academic staff; the difficulty in assessing and comparing pure and applied research; and the cost of the whole exercise, especially in terms of staff effort. Following the last RAE (2001), a detailed review of the exercise has been initiated and it is likely that changes will be introduced before any further RAE is undertaken. However, notwithstanding its failings, there is also much evidence that, as a policy tool, the RAE has been successful. Research funding has been concentrated very effectively in leading institutions; over a quarter of research income is earned by Oxford, Cambridge, Imperial College and University College London, and 80% of research funding is earned by 20% of institutions. A hierarchy of institutions and departments has been created on the basis of RAE assessments which has a range of knock-on effects, especially on non-Government research income and the recruitment of research students. Moreover, it is clear that most universities reflect the RAE assessments in their internal allocation of funds. There is also some evidence from citation research that the quantity
of research and the international standing of research has improved. Views vary about where the balance lies between the costs and benefits of the RAE, but, assessed narrowly as a mechanism to achieve the selective allocation of research funding, it must be regarded as a success.

● The RAE has offered clear incentives in terms of funding and status. The period since 1979 has also seen moves towards the assessment of teaching, especially through the work of the QAA. In the 1980s, Government became increasingly concerned with quality and standards in higher education; the existing patterns of self-regulation were seen as “cosy” and undemanding. Government sought to strengthen university procedures and accountability; at the same time, Government has been concerned to ensure that prospective students are fully informed about the standing of particular institutions and courses. The result was a combination of institutional audits and subject-based assessments overseen by the QAA; the subject based assessments included a rating of individual subjects in each institution, most recently scored by six criteria, each with a four point scale (maximum “score” of 24).

Like the RAE, quality assessments for teaching have been highly controversial. The incentive provided is not directly a financial one and assessments do not automatically inform resource allocation. The main drive is one of status, although there may be resource-related secondary effects, especially in terms of student recruitment. The tools developed have, however, been widely recognised as cumbersome, imprecise and, most important, excessively costly and time-consuming. As a result, the system has been abandoned and a new, more streamlined set of procedures will be implemented.

This may suggest that, as a tool of Government policy, quality assessment of teaching has failed. However, whilst the costs were almost certainly disproportionate, there is no doubt that the assessments provided a public and competitive focus for teaching activity which prompted many institutions critically to examine their own procedures for student recruitment, progression and assessment, for curriculum design and content, and for support services. The incentive provided by public ratings or scores in both teaching and research which emerged in the 1980s and 1990s, and, in particular, the impact of highly contentious and much criticised league tables produced by the national press, proved to be a blunt but effective policy tool. Very few institutions and staff have been immune from the impact of such ratings.

● A further set of incentive tools which has emerged since 1979 has been the emergence of performance indicators. These have been used to promote a variety of Government policies. Through the 1980s much attention focused
on the need to improve management practice within institutions: an increased awareness of income and expenditure; the real cost of activities; the effective management of resources; and the enhanced exploitation of assets. In 1985, the Jarratt Report advanced the idea of a university as a corporate enterprise, stressing the authority of university councils and the role of the vice-chancellor as Chief Executive. Government sought to encourage the use of performance indicators (for example, showing unit expenditure by institution and by activity, and a variety of other financial measures) to increase institutional awareness of relative standings and to inform internal management practice. Again, the incentive tool sought to exploit competitive instincts between institutions, by providing information in a public, accessible form, in this case to strengthen management practice. In effect, use of the indicators within universities varies widely; nor is it the case that performance indicators were unheard of before 1979. However, the explosion of comparative measures has certainly helped to inform institutional management and has therefore contributed to the achievement of Government policy.

More recently, performance indicators have been used to support a further priority of Government policy, widening access to higher education for under-represented social groups. A range of indicators is produced showing by institution the proportion of students from different socio-economic and school backgrounds. By providing this information and developing a wider awareness of performance, it is hoped that institutions will respond to Government policy priorities. To date, it remains to be seen how successful this incentive tool will be in delivering its objectives.

Performance indicators therefore act as a tool of Government policy by relying on and fostering competitive instincts within institutions and by applying moral pressure, as well as through the direct provision of improved management information and mutual awareness.

Lastly, the period since 1979 and especially the 1990s has seen an increase in the range of earmarked funds intended for specific policy-related purposes available for institutions, allocated either on a formulaic basis or by competition. In the late 1990s, Government sought to strengthen the wider role of universities in wealth creation and the support of their local communities and regions. Examples include the exploitation of research, the provision of consultancy and advisory services and the expansion of continuing professional development. To this end, a “third leg” or “third arm” of funding has been created, initially through the Higher Education Reach-Out to Business and the Community (HERoBaC) fund and more recently through the Higher Education Innovation Fund (HEIF).
Other earmarked funds have been established to promote further elements of Government policy. Thus, following on from the Bett Report which highlighted a range of staffing issues in universities, resources have been made available to support institutional initiatives including the development of equal opportunities, staff training, job evaluation and the recruitment and retention of scarce staff. Another example is the allocation of funds to improve the capital stock of universities, both buildings and equipment, especially related to research. Other funds may be distributed through the main funding formula in order to provide a policy-related incentive. Thus, a premium is currently paid to universities for students with disabilities or from particular geographical backgrounds, both initiatives developed in response to the Government's drive for social inclusion and widening participation.

The proliferation of such earmarked funds is a source of concern for many universities, especially bearing in mind the time and effort required in application, administration and accountability. They also represent a further erosion of institutional self-determination in the allocation of resources. For Government, however, this is an important policy instrument, ensuring that scarce resources are targeted for the purposes intended.

Overall, the use of incentive tools, “carrots” intended to encourage or tempt universities to pursue particular actions without actually requiring it, is central to Government policy. On the one hand, their optional character may imply a greater degree of acceptability, although in practice the ability of institutions not to pursue a particular policy may be limited (for example, in 1996 and 2001 every university entered the RAE even though for many institutions the rewards were minimal). On the other hand, from a Government point of view, the outcomes may be less predictable and more dependent on local interpretation and/or individual procedure or preference. Given that the results are less certain; the importance of costs against benefits may become even more important in the assessment of effectiveness as instruments of policy. Certainly, concerns about cost have undermined the impact of the RAE and quality assessment, and have questioned the use of earmarked funding.

A second form of “carrot” is the symbolic or hortatory tool. This involves the re-alignment of fundamental beliefs and principles in line with policy objectives and may be observed at system, institutional and individual levels. As has been noted above, a persistent theme in Government policy since 1979 has been the encouragement of stronger management within institutions combined with the development of alternative, more diverse forms of funding. This may be summarised as the rise of “the entrepreneurial university” (Clark, 1998). Burton Clark’s well-known study focuses on one English university,
Warwick, but the values and practices which characterise the entrepreneurial university became deeply embedded in many other English universities since 1979. Through the period ideas of enterprise and the use of incentives penetrated institutions; competition and entrepreneurship have been encouraged; management has been streamlined and decision-making made more rapid and immediately responsive to changing circumstances; dependence on Government funding has been reduced; and awareness of market forces affecting all areas of institutional activity has increased. Acceptance of the idea of the university as a corporate enterprise has now permeated every university, old and new. A new generation of academic and support staff is emerging for whom traditional values of higher education as a community of scholars and students, whilst still identifiable, are certainly less important.

The emergence of the entrepreneurial university created a new set of tools which have underpinned the implementation of many different strands of Government policy. By establishing a working environment conducive to change and receptive to new, emerging priorities in higher education, the implementation of Government policy for higher education was eased. The emergence of strong institutional management assisted the Government in the promotion of enhanced selectivity and accountability in higher education and in the development of alternative funding sources. Similarly, Government policy to foster diversity in higher education was strengthened by the growing awareness of market forces and the emergence of strategic planning within institutions.

The third and final set of instruments are learning tools. In fact, such tools are closely related to the idea of the corporate university. Central to the changing approach to management after 1979 (“New Public Management”) is the idea of strategic, corporate planning. At the heart of an effective planning system is the idea of learning, researching the strengths and weaknesses and market position of the institution and then learning from experience through effective internal accountability, feedback and evaluation which then informs future decision-making; thus, a planning cycle is created. In this way, the institution in continually looking to improve its performance and to respond to new policy requirements. As with the emergence of the entrepreneurial university, tools were created which worked to the assistance of Government in its pursuit of policy objectives, especially in the creation of an enterprise culture and the promotion of institutional diversity. Such developments may be viewed as bureaucratic and increasing the power of central institutional managers; alternatively, they may be seen as improving management practice at a time of rapid change and pressure on resources. In reality, the impact of such changes on individual institutions and thus the effectiveness of these
particular tools has depended on the ability and sensitivity of individual managers, both academic and administrative.

In conclusion, it is clear from this analysis of Government tools and their use in higher education that the views of Government and of institutions on the choice and suitability of difference policy tools will vary according to their contrasting perspective and priorities. Broadly, these may be summarised as follows:

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<th>Key factors</th>
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<td>Government</td>
<td>Higher Education Institution</td>
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<td>Predictability/certainty of outcome</td>
<td>Institutional freedom</td>
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<td>Political consequences/sensitivity</td>
<td>Availability of resources</td>
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<td>Efficiency of operation</td>
<td>Response of staff and students</td>
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<td>Timescale</td>
<td>Scale of change required</td>
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In weighing up these key factors, Government has access to a wide range of different policy instruments. Both “sticks” and “carrots” are used, often depending on the scale of change undertaken or the anticipated level of acceptability within the academic community. Both can be successful, but the use of incentives rather than compulsion is inevitably less predictable and less targeted in its outcome. Both need to be viewed alongside other forces for change in higher education, including shifting patterns of student demand, rapid developments in technology and methods of learning and the growth of globalisation. In particular, policy tools need to take account of market forces, especially for student recruitment, research funding and staffing. Government efforts to encourage more students to enter some branches of science and engineering have regularly failed in the face of falling student demand; thus, the emphasis has shifted to emerging subject areas such as management and computing. Attempts to increase participation are also heavily dependent on the desire and ability of potential students to take up the additional places available. Academic staff must be recruited and retained in an increasingly international marketplace where rewards elsewhere may outstrip the willingness or ability of institutions and Government to find the necessary resources.

Finally, both sticks and carrots have contributed to the erosion of autonomy for English institutions. However, in this particular context, given the importance of incentive tools in the implementation of policy, it is important to recognise that in part universities themselves have been complicit in this process. In theory, as chartered independent bodies or as independent bodies set up by act of parliament, English universities have and retain a high level of independence. Government policy encourages diversity...
and the establishment of distinct missions. Yet, universities frequently fail to respond to this particular policy direction and, instead, pursue a broad base of activity. Few institutions have the self-confidence to turn their backs on particular developments leading to “mission drift”. It would be ironic if “sticks” had to be used to encourage the diversity which “carrots” have sought to achieve but with minimal success.

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University Research Activities: On-going Transformations and New Challenges

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Abstract. In times when excellence is at the top of the research agenda of all research and innovation policies, especially in Europe, research universities are the implicit reference model of most policy makers and most public debates. However, the implications, that is a major geographical concentration of public means and the existence of a dual system of training, are rarely highlighted; it is on the contrary, often when there are references to “cohesion”. This paper suggests that, although this trend is clearly visible, the situation is more complex. In particular, the analysis overlooks another central role of universities: they have also become the main proximity knowledge provider. Both trends combine and result in radical transformation of university organisation – the separation of teaching departments from research structures, may these be called groups, units, centres, institutes or laboratories. This leads to question whether their present organisation is relevant to the socio-economic environment: I argue that the very fast increase of not-for-profit associations/foundations closely linked to universities are a lasting and promising feature of the university-society connection. These changes call for more study of university governance, certainly a pressing issue in countries like France.

* The word “university” is used here as synonymous to higher education institution. Readers will understand how important the difference can be in a country known for its parallel system of grandes écoles, even more when considering the author’s institutional background!
Introduction

Not being a specialist in education studies, I was struck by three main aspects of change brought forward by my colleagues during the work which took place in the High Level Group on Foresight for Higher Education/Research Relations initiated by the European Commission in 2002. They deal with quantity, trajectories (cf. the growing importance of biographical planning) and curricula (new competences required).

There seems to be a consensus that, after the very fast increase of the last decades, we are reaching a plateau or even that we shall see a slow decrease in numbers, in line with demographic trends. Does this mean that the current level of about 30% of an age group going through higher education should be seen as a maximum level (as with the mythical figure of 80% of an age group for the baccalauréat in France)? If we believe that we are entering a new type of knowledge society, is it unrealistic to expect that half of an age group could go through higher education 20 years from now? If this is the case, then whatever the demographic trend, there will still be an important increase in numbers.

Making assumptions about this trend leads to a second striking aspect: we can foresee very different trajectories. Lifelong learning is a central element in evolutionary economics; on the job training or training through experience are important in features mentioned to explain the different performances of “national systems of innovation”. However, up to now formal training at higher education level has mostly been considered as a separate function, most of the times provided through “ad-hoc” settings and generally over short periods of time. “Formation continue” as it is called in French is even a fast growing market where private dedicated entities flourish. In France, more and more universities and grandes écoles take account of this market which represents as important an activity as initial training in some institutions (in engineering as well as in management), but they provide for it as a completely separate activity, often creating subsidiaries for it; furthermore, in all cases, these training activities are not part of tenured staff duties.

What we are then considering when we speak of “formal” lifelong learning – the adjective is for me essential in this sentence, and often forgotten -, and following the Bologna adoption of the European credit system, is a complete redefinition of student paths. Assimilating initial training with
university should disappear progressively, not only between levels (it is not uncommon in the United States for PhD students to come back after having worked for some time, at least in my field) but even within levels. Peter Alheit expresses it clearly when he writes (p. 10): “university learning remains no longer an activity of young students before starting their professional career. It begins to be a usual necessity of adults’ working life creating links between periods of professional work and new and repeated periods of scientific training.”

What is at stake is not so much an institutional reshuffling, changing definition of degrees (see for instance the recent translation of the Bologna declaration in the new French decree creating licences and masters with no reference to duration nor years, as was the case in previous other official documents about the well known 3-5-8) nor accreditation of prior learning from experience being already legally formalised. The issue is mostly one of transformation of university practices, and, more bluntly, of professional practices – there are not many studies on the collective functioning of university professors and even less comparative studies, which should be a high priority on the agenda for research on higher education in Europe!)

The third aspect is linked to the new competences required of students. J.J. Paul speaks of the growing importance of “behavioural features”: “educated individuals who have learnt to learn”. P. Knight proposes an impressive list of such features: “willingness to learn, self-management skills, communication skills, effective learning skills, exploring and creating opportunities, action planning, networking, coping with uncertainty, transfer skills, self-confidence, team-working, managing others, critical analysis, being able to work under pressure, and imagination/creativity”. These “are learned, may be stimulated but cannot be reliably taught” (Knight). These “complex outcomes of learning” thus require new approaches. Problem/project based learning (PBL) is, at the core of such transformation according to A. Kolmos. Whether this entails more “situated technological knowledge and competencies”, as suggested by A. Kolmos, or whether the objective is to “define training according to competences more than according to occupations” (J.J. Paul) remains to be further analysed. However, the issue remains the same. A strong new component complements the traditional transmission of established bodies of knowledge conceived in a disciplinary way, disciplines becoming narrower and narrower over time. However, it is difficult for this complement to occur through simple addition, leaving the traditional curricula untouched. Yet, it remains highly hypothetical that we are going to see new “transdisciplinary curricula” emerge: it is not by adding behavioural focused courses or statistics to history, etc., that the curriculum becomes interdisciplinary. What is probably true and difficult to accept for many long established disciplines is that the shared “common core” will become so
important that faculty or department barriers will be reset, and that, in numerous cases, what previously appeared as a fully fledged unified curriculum will turn into a set of different specialisations in a wider curriculum. For engineers, the very specific French approach where grandes écoles train “generalist engineers” before they specialise (within the école, in other higher education institutions or on the job) might well become the general rule: this is ironic, considering the longstanding debates in France about the elitists grandes écoles and “mass” universities!

However, these trends are occurring within a wider debate where the production of new knowledge is considered increasingly essential for the development of our economies and societies, and where universities are increasingly considered as the central locus of this very specific production process. The following sections present the two essential transformations that research activities in universities are faced with in their relationships with the economy and society: the growing importance of “science districts” and the major role of universities as proximity knowledge providers. Impacts on the organisation of universities will then be addressed and some hypotheses about their positioning within public sector research at large will be made.

The changing role of universities in new leading sciences and technologies

The first transformation relates to the role of universities in today’s “leading” sciences and technologies, and, to use an OECD term, the corresponding secteurs de pointe.

Our colleagues from Pisa (Bonnacorsi, 2002) think that we have changed “search regime” with info and bio sciences and technologies. The former regime largely related to post WWII physics was convergent, while the present one is largely divergent. If one accepts over-simplifications, the old secteurs de pointe exhibited three main characteristics:

1. Their emergence was organised around large complex technical objects, such as nuclear power reactors, the progressive shaping of which entailed the existence of a lasting dominant design.
2. They required large specific, dedicated research infrastructures.
3. And they were thus prone to, and even required, central co-ordination, whether by government or by an oligopolistic structuration of markets with frequent reference to theories about natural monopolies.

The new technologies and sectors differ widely. Info and bio technologies are characterised by a proliferation of directions and the dynamics are not
incremental, continuous improvements of one dominant design, but rather a rapid succession of radically different designs.

At the same time, initiative is decentralised and more and more sites are in a position to promote new paradigms. Critical infrastructures are no longer specific to one design but generic, spread over several areas, as much intangible as material: the focus on information highways and on the appropriation regime for knowledge are two essential elements of this trend.

In these new secteurs de pointe, the globalisation of firms does not only concern markets and production structures, as was essentially the case until the beginning of the nineties, it also concerns their research and innovation efforts. Numerous studies highlight this trend. We have studied French large firms for five years at the end of the nineties and have documented the rapid and important internationalisation of research and innovation efforts (Larédo and Mustar, 2001b). However, this trend highlights a very different pattern for the location of their production activities. As an illustration, I would say that large firms research facilities congregate in the existing “science districts” largely linked to the presence of research universities and their “poles of excellence”, but also to the presence of a wealth of small high-tech firms and of competitors. In a sense, the research and innovation efforts of large firms are no longer “multi-national” but “multi-local” or “multi-pole”.

The example of Grenoble in micro- and nano-technologies illustrates this trend, with the highest French concentration of public research capacities. There are active research institutions (especially CEA and LETI labs) and very fast growing research capacities of universities (University J. Fourier in particular) and grandes écoles (INPG), all supported by CNRS through mixed research units (see below) – one of the best known and studied Technopole is the ZIRST de Meylan – with hundreds of high tech SMEs, active incubators and seed-capital companies to encourage start-ups – and now four of the largest micro-electronics companies which have joined together to build a huge nano “lab-fab”, (with billion Euros investment). Such a gathering gives an indication about the length of time required (most public facilities were largely developed for nuclear physics and energy). There are not so many such places in the world, thus a global company will either locate there or in another similar place. The nationality of this “pole” or “science district” is unimportant; what is important is the concentration of means, the room for synergies, and last but not least, the human competences available.

To stress the difference between the two “search regimes”, I often say that, for public intervention, we have moved from a model of specialised research institution (where universities play a marginal role) to a model of incubator where research universities are at the core of developments. We are thus no longer in an era of large centralised programmes, an era which was
not specific to France (the Concorde was a joint French and British adventure, Euratom dreamed to develop the European reactor...) and which is not over (space is the archetype of a full fledged European policy, and civil aeronautics has finally succeeded in bringing even basic technological research at the European level in the sixth European Framework Programme). We enter a period where the issue is to favour the emergence and development of decentralised “poles” and “science districts”. What are the implications of these trends for universities? I see two major issues.

The first one is linked to a redefinition of the concept of research universities. The classical models (from Oxford or Cambridge to Harvard) are comprehensive institutions, which are excellent and leading in all disciplines, from physics to humanities, from chemistry to economics, etc. Grenoble was selected as to illustrate a changing pattern: it shows the extent of means that have to be brought together to be a world leader in one “field”; it illustrates the fact that, however wealthy universities are, they will no longer be able to meet the whole range of knowledge challenges. Although comparisons with firms have definite shortcomings, one can say that universities are faced with the same trend as firms, that is to define their core competences, concentrate their efforts on them, and enter into lasting partnerships with other institutions and their complementary competences. The image helps to see three aspects of this trend: i) the inherent relative nature of competition: it is not enough to be excellent, one has to be better, if one wishes to attract others; ii) the end of the process is not a stabilised world, but an “organised” if not “oligopolised” world where only a few remain ahead, probably not because they do everything, but because they are in a position, thanks to the means brought together, to shape the research agenda and allocate roles and activities; and iii) as for firms (as shown by the computer and electronics markets, see Christensen, 1997 or Hamel, 2000), changes in positioning are mostly linked to “radical” innovations and “breakthroughs” that allow the cards to be reshuffled through the new opportunities provided.

To project ourselves in the future, my scenario is one of strong thematic concentration in a limited number of poles and thus of “specialised research universities”. One interesting and puzzling issue concerns the degree of specialisation. For instance, it is striking to see the importance of social sciences in experiments about potential new uses (such as those of the Medialab). I am also interested in the difference between nano-technologies which require massive equipment investments and genome research where the investment remains within the reach of any sizeable region with a pro-active policy in the field (cf. for instance the emergence of the Genopole in the South of the Ile de France).

The second issue lies in the bottom-up nature of the process. The question is no longer one of central decision-making, as was the case before
when each problem entailed the creation of a specialised research institution or agency, but of progressive aggregation of means (human, technical, financial, organisational) around a localised set of initiators. The Grenoble example is all the more useful as it takes place in a country known for it over-centralisation, where, even though political decentralisation started over 20 years ago, universities still do not have control over recruitment or facilities. Even with such a background, the whole development is made jointly by INPG and LETI (one grande école and the local centre of CEA) supported by a city and the surrounding towns gathered in a district, by the “department” (95 in France) and by the region. The central government has played a marginal financial role, its main activity being a labelling one.

Such a bottom-up process requires difficult choices (why favour nanotechnologies? Even in an engineering university like INPG, this is not obvious) and thus strategy making capabilities: are Universities organised for this? It also calls for public authorities to change their approach, and to clearly give an important role to territorial public authorities (cities, regions) to initiate, and more of a procedural role (based on incentives rather than on direct allocation) to central governments (national and European). There is another implication for public authorities in general: this trend, which sets universities research activities at the core of research intervention, leads to question the separation often encountered between the handling of training and of research policies. Since they are addressed to the same actor, it appears sensible to knit together the various analyses and to create coherence and synergies between both. In short, this trends calls for a unique department covering higher education and research at all levels, and at the European level first.

**Universities and the support of SME innovation capabilities**

The growing importance of territories is reinforced by another trend: the radical shift observed in all policies addressing industrial research over the last decade. A shift from large firms and “national champions” to mythical SMEs. There are good reasons for this. Numerous studies have demonstrated that SMEs are the main local providers of employment, and, in most developed countries, the dynamic part of employment creation. But it is always difficult, if not politically incorrect, to say that if they are SMEs it is because they are small, that is locally rooted, with limited means to access distant places, actors and policies. Italian districts representatives have told us the importance of local resources in their growth and success. The proponents of regional systems of innovation insist on the role of proximity, proximity of knowledge producers with whom they collaborate, proximity of public support. In all our countries the importance of “subnational” level is
increasing, and everywhere policies focus on supporting SME innovation capabilities as well as the emergence of new high-tech SMEs.

These policies exhibit three main features, two of which are well known and studied. There has been numerous studies on financial aspects, differentiating between venture capital (more focused on established SMEs) and seed capital where directly or indirectly public aspects play a central role (Mustar, 1997). Examples abound on the critical role of proximity: even central agencies, such as ANVAR, have been driven to a strong decentralisation of their activities (see Technopolis evaluation of ANVAR activities, 2001) and governments focus more and more on “procedural approaches” (as illustrated in France by the crédit d’impôt recherche). Similarly, much attention has been devoted to intermediate structures: most regions in Europe support a wealth of “technology resource centres” or structures devoted to “technology transfer”. If some of these structures develop their own capacities, most rely on existing capacities. An on-going comparative analysis shows that, even in Italian districts known for their active inter-firm exchanges, public capacities are central to the development of SME innovation activities.

In other words, and this is the third main feature, in the vast majority of cases universities are the main proximity knowledge provider. Here the issue is no longer one of being a world leader, even one of excellence in the traditional meaning of academic excellence; it is one of relevance (addressing the problems of SMEs and focusing on the main sectors in which they specialise) and of professionalism (being good enough to tap and adapt/tailor the relevant knowledge). The work I have done on some of these “local”, “invisible” universities shows that they undertake both post-graduate training and research activities, often with important socio-economic impact. Anecdotal evidence also shows that there probably is a strong connection between this activity and the “professionalisation” of diplomas (at the licence and master – very fast growing DESS in France – levels). These results echo the argumentation of K. Smith who shows that traditional industries (such as petroleum extraction and treatment) and even usual activities (such as fisheries and food products) require the latest and most complex technologies, gathered in what he calls “distributed knowledge bases” (Smith, 2002).

What are, for universities, the implications of this second trend and how does it relate to the previous one? One very first aspect is that it does not require of a university to become a world specialist in order to be relevant for its proximity regional actors. One can thus expect that a university can provide answers to more than one problem shared by a set of firms, or specialise in more than one sector. However, different regions and territories feature very different focuses and/or specialisations. Thus, the more universities relate to their local environment, the more diverse they will be.
The concept of “distributed knowledge bases” does not only call for
distribution among actors, it also entails a distribution among disciplines and
traditional university departments. Contextualisation (as proposed by
A. Kolmos for teaching) also plays an active role: ICT in food products may
indeed be very different from ICT in petroleum industries. The question of how
to organise research between “discipline oriented” and “problem solving”
structures is a second problem that universities will have to face more often.

A third aspect relates to the tension between the two trends: can
universities simultaneously be world class institutions and be relevant at the
local level? To my knowledge, there has been very limited research work on
university dynamics which address the two issues equally within the same
conceptual framework. There are two “simplistic” answers which I consider
counterproductive in anticipating the future. One is, the comprehensive all-
encompassing university (being world leader in all disciplines). This view is
mirrored in the traditional distinction made in the United States between
research and non-research universities (using criteria such as publications or
federal research funding) and in the “dual training” system associated with it.
The other is to consider that all universities can participate in world leading
research with pockets of excellence. It is part of the US rhetorics which claims
that cohesion objectives can be compatible with the building of networks of
excellence. Both views represent for me extremist scenarii: I believe neither in
ultra-concentration nor in wide dispersion, nor do I think that new
communication infrastructures and tools can replace geographical
concentration.

Not all regions will thus have universities competing on world leading
edge sciences and technologies. But nearly all regions will have universities
with “sectoral” and “problem driven” pockets of relevance that go beyond
(often by far) regional borders. Does this mean a dual system? Again, a parallel
with firms can help locating the issue. Is a region without large global players
a backward region? If the focus is on SME capacities, is it not because they are
the active component in regional competitiveness and employment? The
respective roles of small and large firms in employment creation (a crucial
issue for training), at all levels, should be examined more carefully in order to
assess needs. My guess is that we are witnessing a fast changing balance of
roles between the two as is demonstrated by the growing role of SMEs in the
restricted Frascati definition of R&D efforts. And 20 years from now, the
present balance in employment will apply to university training requirements,
the locally rooted needs becoming a determining feature for at least four out
of five existing universities.

The conclusion about the two transformations above is quite clear.
Diversity of higher education institutions is a key towards relevance for the
knowledge based society we are aiming at. The institutional changes which
have been underway for 20 years in most European countries reinforce this trend. Even in centralised countries such as France and United Kingdom, we are witnessing the growing role of the “subnational” level. Thus we can expect to see a growing differentiation between regions, at university level, and that this differentiation will be as much, and may be more, intra-national as international.

The organisation of universities: emerging trends

These changes have implications for public policy making. My presentation has only focused on needs of companies, while similar trends occur for research concerned with public issues and needs; I consider this question to be even more essential than firms’ competitiveness. However the objective is not to address all the challenges that S&T policies face, but to focus on those which heavily impact upon universities. It is enough to say that the dual trend of high thematic concentration in science districts and of wide development of universities as local knowledge providers also applies for public issues, such as health. In this last section, I will highlight three emerging trends which show possible future main characteristics of university organisation. They concern the distinction between teaching departments and research structures, the use of not-for-profit bodies to link with society, and the relationships between universities and so-called government labs.

Structuring research and teaching activities separately

It is difficult to examine the organisation of research activities without taking major results of science studies into account. One major result (as early as the end of the 1970s) has been to highlight the importance of tacit dimensions in the making of science (Collins, 1974) and to “populate” laboratories. We have moved from a model in which scientists are surrounded by “shadow” executants to one where researchers work with technicians, doctoral students, and visiting colleagues who meet to progressively build this tacit knowledge and the new rules of the trade through experiments and with the instruments which support them all (Latour, 1987). The laboratory becomes a focal point, where what Gallison beautifully calls the “hardwiring” of theories takes place. In this context, interrelated statements extend beyond the domain of codified knowledge to link technical devices, human beings and inscriptions. Law speaks of “heterogeneous engineering” and Callon of “extended translation” to qualify these activities, characterised by blurred boundaries and hybrid situations (public/private, interdisciplinary, fundamental and applied at the same time, etc.). This explains the quest for more “connectivity” within systems and thus for more “networking” and
“collaborative” research. The box below proposes a summary of the changing paradigm within which a new interest in laboratory studies has developed.

This framework recognises that research is a collective endeavour, mixing heterogeneous actors, competences and capacities. It puts the emphasis on the “collective” setting, intermediate between individual researchers and research institutions. In such a framework, policies/strategies cannot rely only on “content” dimensions i.e. thematic priorities, they have also to pay attention to organisational aspects. Questions such as “Do we have the right research groups? Are they inter-connected enough? What about their contacts with their environment?” are more and more pressing.

Therefore, an increase of programmes or actions dedicated to the emergence of research centres is not surprising: the Engineering Research Centres in the United States, the Collaborative Research Centres programme in Australia, programmes on centres of excellence in Sweden, Finland or Norway, the Top Technology Institutes in Netherlands or the research centres promoted by different Research Councils in the United Kingdom. In other countries, different initiatives have promoted the idea of “laboratories without walls” (or of “poles” as in Belgium). In France the “research unit” (unité de recherche) progressively became the standard entity, organising activities not only within given research institutions but more and more within universities, where teaching departments are no longer the sole locus of research activities. Furthermore, most research units are “mixed”, meaning both that they are under the shared responsibility of two or more institutions (typically one university and one research institution, mainly CNRS) and that they bring together university “enseignants-chercheurs” and full time researchers from research institutions (Table 1). Similar trends, though less systematic, are also found in Italy and in Spain. It is argued that the research assessment of university capacities in the United Kingdom leads to similar arrangements (PREST, Policy Research in Engineering, Science and Technology, 2000). On the other hand Mayer Krahmer (2001) argues that today’s dispersed German University research is closely related to the university chair system; and the

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<td>Translation</td>
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<td>Scientists</td>
<td>Researchers in laboratories</td>
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<td>Republic of science</td>
<td>Hybrid collectives</td>
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<td>Invisible colleges</td>
<td>Co-operations</td>
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<td>Linear coupling to society: valorisation / transfer</td>
<td>Whirling, interactive coupling with society: network model</td>
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<td>Certified knowledge as sole recognised output</td>
<td>Output “vector” linked to involvement in different environments: CSI research compass card model</td>
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<td>Focus of analysis: individuals</td>
<td>Focus of analysis: laboratories and networks</td>
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Volkswagen Stiftung is developing a programme to support universities which are ready to depart from this system (Krull, 2001).

Whatever position the universities prefer, the trend towards an organisational separation of the entities in which individuals perform their activities of teaching and research is increasing. The separation of teaching departments and research groups is the first emerging trend which may well foreshadow the future organisation of universities. It raises numerous questions about the emergence, shaping, dynamics and overseeing of such “groups”, “units”, “centres”, “institutes” or “labs”. However, there has only been limited research efforts to clarify these aspects and go beyond the stereotyped well known positions, not even to have a better view of the mix of activities and the different “activity profiles” these labs exhibit.\(^5\)

### Relations with the economy and society

There is far less structured evidence of the second trend. However there is an increasing number of signs indicating its growing importance. Let us collect evidence. In Finnish Universities it has been a long standing policy to develop “transfer offices” connected to universities but with a different status to promote, facilitate and organise links with the economy. After a decade of operation, it was considered time to reorganise university management and to integrate these offices within normal university functioning. More in-depth analysis led to abandon this idea to and keep both entities separate (Ormala, 2001). This is part of a wider trend: we have already mentioned the fast rise of regional intermediate structures that connect firms with universities. But besides being intermediaries, more and more, not for profit organisations are used to address the needs of laboratories for specific infrastructures, equipment and instruments, and human resources. In Portugal the rise of university research capacities is strongly linked to the emergence of university connected NPOs (Henriques, 2001). In the United States, not-for-profit research centres located on university campuses and operated by university...
professors have multiplied. In France, after a freeze of nearly 20 years related to the institutional changes of the 1980s, this trend is active again and Armines (French Research Association “oriented” towards Industry) might soon be followed by others, offering a useful model to connect with the economy and society. The objective of Armines is to help bridge the gap between grandes écoles (and firstly the École des Mines de Paris) and actors in the economic and social sphere. The process is to enter into a lasting contractual arrangement with each higher education institution whereby research centres are transformed into “joint research units” for which Armines manages external relations/connections. Thanks to the resources collected Armines brings in new equipment and new human resources directly employed by Armines. One can measure the importance of such a construction by looking at the composition of joint labs between the École des Mines and Armines. Their staff includes about one thousand persons, nearly half of whom are employed by Armines. Such a structure has a major impact: it places research centres at the core of research development and gives a major role in strategy making to the directors of these centres who are responsible for decisions regarding both the École and Armines. Thus it creates a parallel hierarchy (to faculty heads) in the institution.

According to this model it is difficult, if not impossible, to manage teaching and research activities with the same instruments and processes. It also implies that the public dimension of teaching is quite strictly regulated, largely associated with public management. If one requires university research to be flexible, reactive and connected to economic and societal issues, another type of management is required. This is why, from Portugal to Finland – and here these two geographic extremes of Europe are symbolic of the general dimension of the issue -, there have been attempts to find new approaches in what is sometimes called the “third sector” (keeping the objective of public service while adopting more private sector methods of functioning, which is the case with many public utilities services but which requires specific developments for university research). The second emerging trend, largely related to the first one, is thus a separation of management with a growing importance of not-for-profit structures in the management of university research activities.

University research in the wider framework of public sector research

In OECD statistics (and under the Frascati manual), public performers of research are divided into three distinct categories: higher education, other government research institutions (often labelled government labs) and the often forgotten not-for-profit sector. A previous EC project devoted to a comparative analysis of European public performers has shown the continuum between these different types of performers and the blurring of
boundaries and roles. The wording “public sector research” has been adopted
to account for these transformations (see the special issue edited by J. Senker
in Science and Public Policy). The evolution of government labs has been
further analysed by Cox et al. (2001) and is further documented in an
important comparative EC project (Eurolab, final report, 2002). The main
results can be summed up around two main points.

- Government laboratories, which were under strong pressure during
the 1980s and the first years of the 1990s, have been stabilised and
confirmed in their roles in most countries.

- The traditional association of basic research and universities on the one
hand, and of government labs and applied research on the other, no longer
holds. We have documented the blurring of activities. Using France as an
example, we have shown a convergence of research activities at the
operational level of research “groups”, with all types of research activities in
all types of institutional settings (Larédo and Mustar, forthcoming). This
convergence occurs more and more when “mixed research units” (or “joint
research groupings”) are established and leads the so-called “mission
oriented” government labs to become “domain oriented” labs, covering the
full spectrum of research activities in their respective area of speciality
(Larédo, 2001b).

The question is then whether this trend will lead mission-oriented
institutions to progressively become another type of university research
supporting agencies. This hypothesis, which we have not proposed, can be
summed up as follows: the more a “research group” requires “heavy”
equipment and/or undertakes repetitive activities (such as tests), the more it
will be dependent on the non university institution that supports it, whether
CNRS or research council, or any domain-oriented institution (like INRA for
agriculture and food products or INSERM for medical and health research in
France). This calls for another definition of the modes of intervention of
domain-oriented institutions within public-sector research. It does not
diminish their role in developing in-house research capacities, but redefines
the boundaries between what is done within university structures and what
remains largely out of the scope of universities, requiring specifically tailored
units and may be specific campuses. In other word, a third emerging trend
consists in a redifinition of boundaries between different research areas
within public sector research. Whether related to excellence at international
level (as the example of nanotechnologies in Grenoble illustrate), or focused
on relevance to local/sectoral actors, university research can no longer be
thought of in isolation, without taking into account the context of other actors
in public and not-for-profit research. This will lead to increasingly hybrid
research operational structures, a trend fostered by and reinforcing the
separation between university teaching and research structures.
Preliminary summary

All the studies on the “knowledge society” emphasize the essential role of universities, partly contradicting an over-simple interpretation of Mode II models. This concerns both activities undertaken by universities: training and research. This article has been focused on the latter.

However, three elements identified in the work done on teaching echo research activities and impact on them: 1) we may not have reached a plateau, not because of general aspects (decreasing demographic trends) but because of specific ones (an increasing proportion of an age group enter higher education); both aspects being closely related, this has indirect implications for the level of research activities, if only through criteria for recruitment and career development; 2) however it will be more and more difficult to think of training as “initial training”, rather it will be lifelong learning which entails significantly different requirements and teaching practices; 3) at the same time, most authors insist on the importance of new competences required and on the impact both on teaching/learning practices and on curricula. Both trends indicate that, if only for teaching, the present organisation of universities in departments will have to undergo major transformations, a situation which may well reinforce the trend towards a separation of the structures in charge of education and research.

This article has argued that universities are also faced with wide ranging changes in their research activities. They have to face at the same time a global concentration on new leading edge sciences and technologies, and a fast rising need to serve as relevant knowledge provider for the local/regional communities in which they are embedded.

Addressing the long term future of university research raises the issue of how both roles can be articulated. Two opposite scenarios are formulated, often implicitly. The first one reproduces the stereotyped view of the US system described as a dual system, where a few research universities concentrate all world class research across all disciplines, while most others concentrate on professional teaching and locally relevant applied research. The second one considers on the contrary that both objectives can go together and that each university can answer both requirements, being simultaneously relevant to regional communities and developing pockets of excellence. A more sensible view is to recognise that both scenarios are unrealistic: on the one hand, the spread of excellence will be wider than proposed in the first scenario, as universities will be driven to specialise because of the resources needed; on the other hand, problem solving or sectorally driven research will represent the core of research needs, and, as demonstrated by K. Smith, will require more than applied research.
In both cases, development entails a profound transformation of the organisation and conduct of research activities in universities. The three emerging trends identified call for more in-depth analysis and may not be the only ones to consider. The major trend is that of separation of teaching and research structures, departments focusing on teaching and training challenges, while “research groups” should enable more “ad-hoc” structures, favouring interdisciplinarity or/and problem based research activities. Two other trends complement and reinforce this main trend. First, an increasing number of universities establish separate supporting management structures, and develop not-for-profit structures to promote and organise their relations with the economy and society. Second, these trends must be viewed in the wider framework of public sector research, taking into account the on-going transformations of government labs as regards both their research activities and the ways in which they undertake these activities: there is some evidence that more hybrid structures and the development of “joint” research groupings on university campuses are becoming more common. Taken together, these trends raise a set of questions about the “government of universities”, not least by obliging them to have distinct strategy making processes for teaching and research. This is probably the greatest challenge facing universities.

List of acronyms

ANVAR Agence Nationale de Valorisation de la Recherche, “Agence française de l’innovation”.
CEA Commissariat à l’Energie Atomique
CNRS Centre National de la Recherche Scientifique
DESS Diplôme d’Etudes Supérieures Spécialisées
ERA European Research Area
FP Framework Programme
ICT Information and Communication Technology
INPG Institut National Polytechnique de Grenoble
INRA Institut National de la Recherche Agronomique
LETI Laboratoire Electronique de Technologie et d’Instrumentation
NPO Not for Profit Organisation
OECD Organisation for Economic Co-operation and Development
PBL Problem/project Based Learning
PREST Policy Research in Engineering, Science and Technology
SME Small and Medium size Enterprise
ZIRST Zone pour l’Innovation et les Réalisations Scientifiques et Technologiques
Notes

1. This positioning paper is based upon the work done on an international comparative analysis of research and innovation policies [Larédo and Mustar (eds), 2001], on longitudinal work on the development of public research activities in a regional setting (Larédo and Mustar, 2000) and on the comparative analysis of research collectives in human genetics (TSER PSR project, for a review of results, see Larédo, 2001). The main points have already been presented at the STRATA consolidating workshop on science and technology policies in Europe (Brussels, 22-23 April 2002).

2. We even start to find it translated into political programmes; see for instance the recent French presidential campaign and the proposal of some candidates to create a “right” to lifelong education; (this was seen, in one case, as five years of guaranteed income available to each person and to be used at anytime during his/her working life, after reaching majority).

3. Ironically, the Internet and its capacity for instant distant interaction play a more important role in “harmonising” production (from development of new products to production or access for users/customers) than in exploring new directions. The large potential of exploitation (following March’s distinction) de facto implies a higher geographical concentration of exploration capabilities, and therefore of far reaching research and innovation efforts. However, one must always keep in mind that for firms, the bulk of the research and development effort concerns incremental work which can fully benefit from the new possibilities of distant activities.

4. I have developed this point in both my introduction to the STRATA consolidating workshop on science and technology policies in Europe and the Barcelona conference on “Policy, institutions and citizens in the knowledge society”. Briefly, the argument is that “public needs” have always been a major engine for private innovation activities. One cannot understand the US dynamics without taking into consideration the overwhelming role of Defense research. The issue for Europe is to consider whether there can be another public engine. I argue that public needs (in health, environment, training, culture …) can provide such an engine, but that this requires to go one step further in the ERA than simply updating the tools of a stabilised FP and of offering once more a process that has in fact demonstrated its limited scope of application (article 169).

5. For initial results, see Larédo and Mustar (2000) and the PSR project on labs in human genetics (results synthesised in Larédo, 2001).

6. Some consider it as an answer to the difficulties encountered in the traditional university career stages (see analyses by P. Stefan) while others see this trend as adaptation to conditions for public research with the growing need of full-time researchers.

7. The wording of funding agency is a restrictive interpretation of support. One should remember that a number of British research councils own specific labs and facilities which serve the community at large. Similarly, CNRS in France can be understood as another type of supporting structure for university research where financial support to individual projects is replaced by human and equipment support given to collective projects (embedded into the four year project of mixed research units). Readers should also realise that over 90% of the 15 000 CNRS researchers and engineers are located on university campuses in such mixed research units.
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Selection procedure and criteria

Articles are selected for publication by the Editor of the Journal and submitted to independent referees for review.

The Journal is primarily devoted to the needs of those involved with the administration and study of institutional management and policy in higher education. Articles should be concerned, therefore, with issues bearing on the practical working and policy direction of higher education. Contributions should, however, go beyond mere description of what is, or prescription of what ought to be, although both descriptive and prescriptive accounts are acceptable if they offer generalisations of use in contexts beyond those being described. Whilst articles devoted to the development of theory for its own sake will normally find a place in other and more academically based journals, theoretical treatments of direct use to practitioners will be considered.

Other criteria include clarity of expression and thought. Titles of articles should be as brief as possible.

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