UNIVERSITY
OF CATALONIA

WHITE PAPER

ON THE UNIVERSITY OF CATALONIA

ACUP ASSOCIACIÓ CATALANA D'UNIVERSITATS PÚBLIQUES

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ON THE UNIVERSITY OF CATALONIA

White Paper on the University of Catalonia
Strategies and projects for the Catalan University

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Strategies and projects for the Catalan University

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Introduction

University means the generation of knowledge; it means new scientific, social and humanistic models that stimulate progress, coexistence, cohesion and the desire to improve. It means being conscious of the mission with which we have been entrusted; it means the autonomy of knowledge. These are the reasons behind this *White Paper*, which was drafted after a lengthy process of meetings, proposals, presentations and work involving all of the public Catalan universities under the *University of Catalonia* brand. Beyond the symbol lies the spirit. The decided, firm, incorruptible concept of cohesion. We introduce ourselves as the *University of Catalonia* because we believe in it and because we wish to change the Catalan University landscape through a joint pact, a watertight agreement arising as an inheritor of medieval tradition, and which forcefully and responsibly enters the contemporary world.

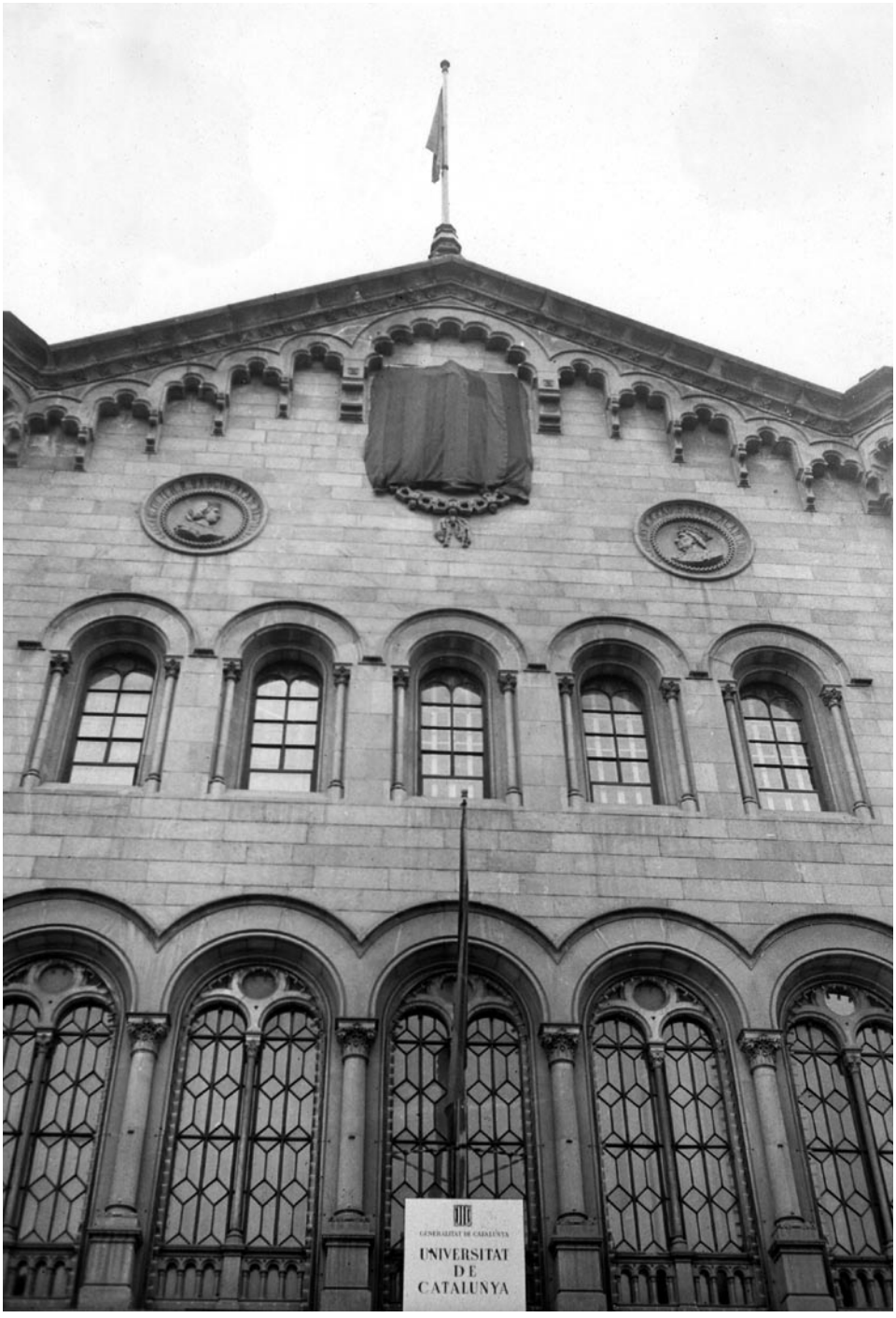
We believe we must speak about what lies on the horizon for the University of the 21st century, but we must not forget that Catalan and European tradition are a reference of a past in which we locate the origin of what we understand by University, the concept according to which we work and to which we devote our efforts. Going back ten centuries, we find one of the oldest institutions, with the greatest prestige and the greatest capacity for renewal in the history of humanity. An institution, the University, that understands that knowledge is a universal, moving, dynamic good and that the essence of knowledge, of research, and of science lies in the ability to transmit ideas from generation to generation in order to broaden and consolidate the rule of rationality and progress.

The *White Paper on the University of Catalonia* is the crystallisation of a process. On the basis of the wealth represented by autonomy, the capacity of decision, the right to speak in one's own voice to define the role to be played by the universities in today's society, the *University of Catalonia* hereby publishes a diagnosis of the present, establishes the aims for the future and presents a set of strategies that go far beyond merely intended programmes or words. This document, the *White Paper*, is open to constructive dialogue at the very heart of the University and with all of the other institutions and social agents. At the same time, however, it is a tenacious spearhead, fashioned from rigour, for us to be different and become better.

Anna M. Geli
President of the Associació Catalana d'Universitats Públiques

1

THE REASONS BEHIND THE *WHITE PAPER*: THE *UNIVERSITY OF CATALONIA*



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1

The reasons behind the *White Paper*: the *University of Catalonia*

Aims and orientation

In the last ten years, European universities have been subjected to a considerable process of reflection and change. All diagnostics suggest that only a profound reform of European universities will succeed in training better-prepared graduates and in strengthening research so that it may become a driving force of economic development, creating the wealth, welfare and social cohesion which characterise the European model of society.

The universities are called upon to play a pivotal strategic role in the changing society and the knowledge economy through three main channels: university education, scientific research and social progress, and collective welfare and competitiveness. Hence, we at the *Associació Catalana d'Universitats Públiques* (Catalan Association of Public Universities – ACUP) consider that now is the right time to compile and release this *White Paper on the University of Catalonia. Strategies and projects for the Catalan University*. This is so for two closely related reasons:

> The *White Paper* aims to contribute, through its Catalan perspective, to the European reflection on the University. The moment is crucial, with the development of the European Higher Education Area (EHEA) and the European Research Area (ERA), the globalisation of societies

and economies, and university reforms in many countries. To this end, the *White Paper* adds to and aims to be a part of the series of reports, recommendations and reforms carried out by the universities and governments of different countries in recent years, as well as of the initiatives of supranational bodies such as the European Union (EU). It also integrates the deployment of master or strategic plans of the ACUP member universities. In spite of concentrating only on the reality of Catalonia (and by extension that of Spain), the *White Paper* also seeks to be a document of general reflection on university policy matters (and it is for this reason that it has been edited in Catalan, Spanish and English).

> The *White Paper* is, furthermore, the configuration of a common roadmap of public Catalan universities within the framework of the ACUP. It is one of the consequences of the fabric of participation and cooperation that the public Catalan universities have built in recent years. It is clear that, right now, each of the eight public Catalan universities has its own profile, its own objectives and its unique strategy in place to achieve them. Nevertheless, it is also clear that only a collective, cooperative strategy can enable the undertaking of lasting changes with an international scope and an effective impact on the University.

One of the aims of the *White Paper* is to include Catalan society in a debate as to the place the University should occupy in it. It is, therefore, the expression of a point of view which strives to be added to, modified and enhanced by other points of view that coexist in our society. At the same time, the *White Paper* clearly aims to be applicable and constitute a kind of master plan. We understand that many diagnostics exist regarding the reality of the universities, and that the added value that may be provided by the *White Paper* does not just consist of yet more data and diagnostics, but rather – and above all – proposals for the effective construction of a new University in the short and medium term. Thus, the bulk expressly consists of concrete strategies and projects which are intended for deployment in the coming years. Rather than merely sketching out the ideal model of university, the decision was made to exercise realism taking into account the current situation and conditioning factors, recent history and the regulations governing the Spanish and Catalan universities. Consequently, the aim is to propose lines of action for the building of a new model of university attending to these conditioning factors.

Many of the strategies and projects mentioned in the *White Paper* are the direct competency of the universities themselves. Others are proposals

made to the competent administrations or governments, or aspects that go beyond the institutions. For this reason, at the end there is a list of the sixty-four strategies and the seventy-three projects, specifying the primary and the secondary responsibility of each of the agents of the system (University, Spanish Government, the Government of the Generalitat de Catalunya, the private sector, institutions and social bodies).

Towards a new model of university: the *University of Catalonia*

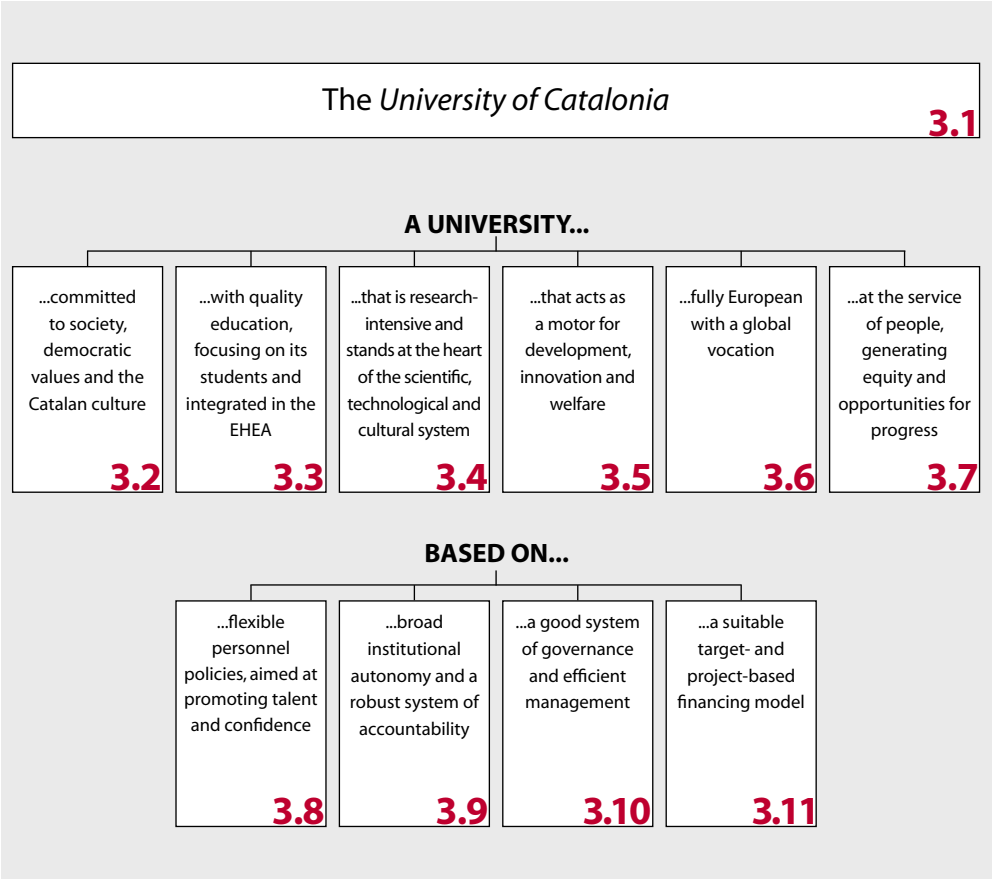
The central project of this *White Paper* consists of weaving a network and a project for the future for Catalan public universities, which is at the same time solid and flexible, allowing the unitary conception of the University's principal contribution to the Catalan society of the immediate future. In recognition of the effort of the Republican Generalitat Government to build an autonomous, innovative, quality-driven University, we have decided to call this project *University of Catalonia*. Therefore, the concept of the *University of Catalonia* as a university system that is cohesive, territorially balanced, coordinated, with a common scope and with unique and complementary institutional profiles forming the core of the *White Paper* and shaping and structuring the rest of the proposals. It is the message of the firm desire to build a university system that promotes collaborative projects in education, research and knowledge transfer to society. A model of regrouping that foments synergies, economies of scale, the search for standards and the effort to collaborate and cooperate. Henceforth, the Catalan universities wish to work in a more coordinated fashion and develop strategic allegiances in order to improve the task of the universities in particular, as well as of the system as a whole. In Catalonia it is possible and necessary, thanks to the complementarity and the wealth of the different public universities, to build the *University of Catalonia* and put it at the service of the country and of its citizens, and promote it internationally as a university area of reference in Southern Europe.

Beyond this transversal strategy of the *University of Catalonia*, the new University proposed by the *White Paper* is determined by six broad aspects regarding the university model and four broad instrumental aspects which are necessary to establish this model (see graphic 1).

This new University must be committed to society, democratic values and the Catalan culture. The training and education it provides must be

GRAPHIC 1

Towards a new model of Catalan University.



high-quality, focused on the students and integrated in the EHEA. It is important for it to be a research-intensive University at the centre of the scientific, technological and cultural system, and for it to serve as a motor of development, innovation and welfare. At a time of globalisation, the University must be European and have a global vocation. Finally, it must be a University that generates equity and opportunities for progress.

The four instrumental aspects that must allow the building of this new model of university are flexible policies on personnel, aimed at promoting talent and confidence; broad institutional autonomy and a robust system of accountability; a good system of governance and efficient management, as well as a suitable model of financing based on targets and projects.

The *University of Catalonia* in figures

TABLE 1

The *University of Catalonia* (2005-2006).

Number of undergraduate students	205,050
Number of postgraduate students	29,116
Number of doctoral students	11,963*
Teaching and research staff (equivalent to full time)	11,211
Administration and services staff	7,026
Administration and services staff/teaching and research staff ratio	0.63
Students/teaching and research staff ratio	18.29
First, second, first and second cycle studies on offer	457
Master's programmes on offer	658
Postgraduate courses on offer	873
Doctoral programmes on offer	462*
Graduates of first, second, first and second cycle	28,488*
Theses read	1,218*
Surface area built	1,459,143 m^{2}**
Economic volume (liquidated budget of university expenditure)	1,502,496 (2006)***

SOURCES > Generalitat de Catalunya, * year 2004-2005, ** Rectors' Conference of Spanish Universities (CRUE) 2006, *** in thousands of euros.

TABLE 2

Comparative table showing the university system of Catalonia, Spain, the EU and a variety of countries of reference.

	Catalonia	***Spain***	***The Netherlands***	***Sweden***	***Denmark***	***Finland***	***EU 19 Average***
Investment in higher education as a percentage of the GDP (2004)*	1.2 (GDP Spain) 1.0 (GDP Catalonia)	1.2	1.3	1.8	1.8	1.8	1.3
Expenditure per student in $ PPP (2004)*	9,815	9,582	13,846	16,218	15,225	12,507	10,191
Students/lecturers ratio equivalent to full time (2005)**	18.29*	10.6	n/a	8.9	n/a	12.5	16.4
Investment in R&D as a percentage of GDP***	1.43* (2006)	1.2**** (2006)	1.78 (2004)	3.95 (2003)	2.48 (2004)	3.51 (2004)	1.81 (2003)

SOURCES > * Generalitat de Catalunya, ** OECD, 2007a, *** OECD, 2006, **** Spanish Statistic Institute (INE).

Methodology and participants

The process of drafting the *White Paper* began in February 2007, after it had been defined by the ACUP and following the initial commissioning of six external technical presentations which were written by specialists in a variety of fields of university life: training (Josep Nadal), research (Fernando Albericio), governance (Joan Subirats), finance (Guillem López-Casasnovas), staff policies (Francesc Solà) and University-territory relations (Lluís Arola). Our special thanks to all of them, including the coordinators and teams, for their contributions (see the section on Authors and collaborators).

As of the summer of 2007, in which the six aforementioned technical presentations were submitted, a dual process has taken place: on the one hand, in the month of July, a collective workshop was organised for over a hundred and forty participants, at which the external technical presentations were discussed; on the other, the coordination and editorial team, directed by Josep M. Vilalta, the ACUP's Executive Secretary, established the bases for the *White Paper*, based on the analysis of documentation (see the section on Bibliography and resources), the external presentations and the participation of different groups from the eight public universities involved, led by the eight rectors forming an Editorial Board, and with the collaboration of the presidents of the Boards of Trustees, the vice-rectors of several university areas, managers and other members of the university community, as well as a variety of players from economic, social and cultural circles (see the section on Authors and collaborators).

With the public presentation of the *White Paper* in June 2008, the aim is to open up broad public consultation concerning this proposal for the future of public Catalan universities. The target is to hold a debate within the university community of Catalonia and of Spain, as well as to count on the contributions of public institutions and bodies of the business, social and cultural sectors of Catalonia and Spain as a whole.

2

CONSIDERATIONS REGARDING THE RECENT DEVELOPMENT OF CATALAN UNIVERSITIES

2

Considerations regarding the recent development of Catalan universities

Josep M. Bricall

2.1

It would not seem unreasonable to carefully examine a reality and stop to ascertain the balance attributable to its recent development. In any case, it is far better than choosing to invent a virtual reality which, in the best of cases, will end up being the same as the reality we contemplate. And, in addition, time will have been lost.

This is why it would be advisable to take a look at the Catalan universities, without prejudice or, at least, only with the inevitable prejudice.

To start with, there is a need to recognise that the University Reform Law (LRU) of 1983, followed by the Law of Promotion and General Co-ordination of Scientific and Technical Research of 1986, close a terrible period which had opened in Catalan universities in 1939 when, with Barcelona occupied, its university's autonomy, which had been granted by the Government of the Republic only a few years before, in 1933, was suppressed.

The Law of 1983 was proposed and it achieved different objectives. Highlights include:

> The restoration of university autonomy, albeit with a model and a scope that do not fully fit in with what the Decree of 1933 envisaged. This restoration also sought to incorporate everything that had

occurred in the universities of the continent as of 1968 and the subsequent reforms that were triggered.

> The conception of the university institution according to the well-known model of Wilhelm von Humboldt, the Prussian Minister who irreversibly steered university teaching towards the conjunction of research and education by allowing the introduction of experimental science to the University. As a result, the Law meant a serious commitment to the stimulation and promotion of university research.

> The adaptation of the university structures to the massive growth in the number of students, which had already been felt but was expected to increase even further.

The reform brought about by the aforementioned laws changed a situation that had languished under a dictatorship that was incapable of assimilating prior attempts and the difficulties involved in putting it into practice in the first years of democracy. These circumstances explain that at the time of their enactment, in the rest of Europe, new airs had already arrived and had been incorporated in successive reforms, opening perspectives that were not even contemplated here. Likewise, symptomatically, one of the articles of the Law, article 11, already hinted at what was to come when it authorised – with some reserve – the contracting of public and private bodies or natural persons, the execution of work of a scientific, technical or artistic nature, and the organisation of specialisation courses.

2.2

In 1983, with the subsequent transfers of the Catalan universities to the Generalitat in 1986, a stage began which the passage of time has allowed us to consider as being positive for these universities.

Some trends are notable and deserve mention:

> The universities have managed to incorporate a growing number of students without any major problems. There were 129,617 students attending Catalan universities during the 1985-1986 academic year, and by 2004-2005 the figure had risen to 226,364. During this academic year, the academic staff that attended to these students reached 13,694 people. That cannot make us overlook the fact that

the dropout rate represents about 20% of the student body and that the real average duration of studies exceeds the considerations of the regulations by 40%. Nor can the scarce mobility of the students and the reduced presence of foreign students and teaching staff (with the exception of the success of the Erasmus programme) be ignored.

> Research has established itself at the universities. The *White Paper* provides some very clear signs of this. For example, among the top ten Spanish universities to have been awarded projects and competitive funds under the EU's 6th Framework Programme for Research and Technological Development, half are Catalan; and of the scholarships awarded by the European Research Council (ERC) to young researchers for that year, over 60% of those allocated to Spanish universities and research centres went to Catalonia. Between 1987 and 2003, expenditure on Research and Development (R&D) tripled, reaching 1.44% of the Gross Domestic Product (GDP) for Catalonia in 2004 (still a long way from the target of 3% set by Lisbon). The establishment of research centres in Catalonia by the Administration and the existing possibility of contracting have helped transform the landscape plausibly. If we add innovation to this, the proportion is 2.61% of the GDP, below Madrid's 3.16. In the Innovation Scoreboard indices, Catalonia ranks 82nd, whereas Lombardy is 71st, Rhône-Alpes is 33rd and the region of Stuttgart is in 6th place.

> Expenditure per student has grown continuously. In 2004, it was 9,815 euros, compared to 7,701 euros four years before. That puts the figure at a slightly lower level in comparison with France and higher than the Netherlands, Italy and the average for Spain, though Catalonia is still a long way from the target of 2% of expenditure on higher education in comparison with GDP proposed by the EU. Nor can the policy and quantity of scholarships and the current system of finance be exhibited as an example of equity: increasing numbers of students and the lengthening of the period of studies by the population have not received the support typical of a welfare state.

> Both facilities and scientific equipment have undergone an appreciable modernisation. Funds for investment plans from 2001 to 2006 totalled 402,000,000 euros.

The synthesis of this quite positive evolution – especially considering the starting point – however, shows signs of weakness, some of which

we have contrasted to the tendencies recorded. Are these weaknesses the sign of certain shortcomings that require correction? Are they perhaps the consequence of the greed of the system of financing? Do these signs show that the universities and the people in government responsible for university policy are unaware of the changes taking place in our societies? If so, does this mean that they dare not take the steps that such changes involve?

To overcome what these signs of weakness represent is not an easy task and, doubtless, cannot take place without tension. These are the challenges faced by our universities.

The problem is that failing to face up to them might jeopardise important aspects of the renovation that began in 1983, since weaknesses may completely erode the gains made thus far with great effort.

2.3

The idea that we are living in a knowledge society subject to increasing globalisation is repeated incessantly.

The influence of technical and social changes on the evolution of education systems has grown significantly since the Industrial Revolution. Not only has the number of students grown, but also the range of studies offered has broadened and research has taken a central role. The appearance of new careers influenced secondary studies and eventually ended up affecting higher education. The scope eventually went beyond professional studies, initially conceived for the training and preparation of doctors, lawyers and clergy, with the appearance of technical studies that led to the creation, in the mid-19th century, of higher institutions offering such studies.

In an unprecedented development, current technological innovations have been applied to services, completing the impact which technology had had in the past on other economic activities. New social demands and job prospects require education and preparation, widening the already broad range of services offered by the higher education institutions.

At the same time – or perhaps, as an effect of what we have just mentioned – the latest technology has taken communication and mobility worldwide, and as a result has transnationalised societies, strengthening a long-term trend which has nevertheless unfolded in fits and starts.

The transformations that have taken place were visible enough to erase the perspective of their secular development. Keen to discover

new worlds and witness historical phenomena worthy of receiving noisy denominations, we have changed what was the stage of a process into a new reality characterised by knowledge and globalisation.

A second occurrence – which does not offset the previous one – is the growing presence of the European dimension. More or less public institutions have exerted tutelage functions over universities (especially public universities) and have cooperated in their funding. Whether it was the church in the past, or the modern states of today, these organisations have been the last resort of university institutions, from founding them to accrediting their studies or determining a working model, since university autonomy itself has not always been interpreted in the same way. The existence of tutelage organisations, although they depend on the established legal systems, respond, in practice, to the prevailing reality, and they end up replacing previous organisations.

In the present circumstances, the European states are not equal to the task of ensuring the complexity and the mobility that history itself is demanding. If one thinks of the ground that has been covered since 1987, when the Erasmus programme was timidly implemented despite a great many obstacles, up until the presence of the EHEA and the ERA at the very heart of each university, one can get an idea of the pressure exerted by a reality which is inevitable due to what the universities themselves have meant; a reality that promotes mobility and that demands structures to accompany it, as well as the use of common languages.

The European dimension superimposes itself on the reality of scientific communication which has always had a global reference without replacing it. This dimension does not just strengthen the communication of the science and technology community; rather it recognises a new dimension in social, professional and economic life and in research and training, erasing the traditional frontiers and reducing the sphere of influence of traditional tutelage, characterised by its inability to understand what is happening. Spain's own difficulties assimilating and adapting to the new framework of the EHEA are eloquent proof of this.

2.4

The changes have been profound enough to need new knowledge to come into play in social and economic life, since professional practice alone cannot furnish such knowledge. In parallel, the application of university research is no longer conceived as a mere top-down transfer of university

research to enterprise, government administrations and other institutions of social life, but as the result of reciprocal actions between research agents located in different places (wherever the research centres, the industrial laboratories and the university departments created and promoted by the administrations are located), and between these agents and the recipients of the research or the technology.

The interaction between the world of higher education institutions and the rest of society does not end here. Educational institutions, which are essential to the programming of training, may not supply the complexity of the professional activity outside training centres (in the practice of solving day-to-day problems) and that deserves academic recognition of professional experience.

Traditionally, the functions of the University have been distinguished by their predominant cultural mission, supported by the overwhelming weight of an education of a general nature and by the presence of basic research, not oriented from without the University. But what has been happening for some time is that those in charge of social organisations – including entrepreneurs – and of the administration need to apply the results of research to achieve their objectives better, whether this means greater profits or broader, better satisfaction of collective needs. To attain this, they are willing to pay to get these results. As for the citizens, they demand the services of higher education to progress in their professional lives, to improve their performance and add to their education.

This puts the universities, which pursue the offer of a service of a collective nature, in a situation of risk. If this demand exists and it has the means to make itself heard, there will be bodies willing to provide it. There already are some. On the other hand, the current technical renewal of the services enables disposing of tools and instruments provided by modern technology that can cross administrative barriers and cultural diversities, and can reduce the space required by face-to-face education in the classroom.

This is an aspect to be taken into account by the universities, both new and old.

2.5

If the above is true, it is hardly surprising that the problems of the past go beyond the problems stemming from hosting an increasing number of students. University policy must open up new fields of learning through

studies that are sometimes difficult to couple with the more traditional ones. And it might be reasonable to ask oneself if there is not a need to introduce new outlines for its organisation. The professions and occupations themselves are not all that stable and take far less time to undergo transformations than in the past, which causes the shortening of initial studies and allows the extension of learning at a later time. The terminal horizon of studies is far longer and tends to span one's entire life on an ongoing basis. It also makes sense to ask oneself if there is a need to persist in one single scientific discipline in all cases or whether, sometimes, it might not be preferable to facilitate a syllabus change allowing the student a certain degree of flexibility in its composition. It is precisely this flexibility that suggests the determination of clear, recognised milestones along the academic path and, therefore, the differentiation between pre-graduate and graduate studies.

Mobility seems to impregnate the itinerary of the student's life, mobility towards the successive choice of the elected centres – not to select just those from within the administrative boundaries – and also mobility due to variations in professional life or changes in the working world and the social demands of studies. Therefore, students must be provided with knowledge to strengthen the aspects of their basic education, which, in addition to giving them the wherewithal to overcome the transitory demands of the moment, would reinforce their capacity to reason and criticise the framework that surrounds them as students and professionals.

Along these lines, we could ask ourselves how education in the humanities should be designed. Although its weight may vary according to the case, it constitutes an inalienable ingredient of the type of education one expects to receive at the universities. Rigorous reflection on issues that affect people and societies – and therefore, the attention they deserve – cannot be overlooked by higher education institutions in general.

Despite participating in common methods, the multiplicity of objectives to be satisfied would suggest that the higher teaching institutions should opt for a specialisation. The diversity of approaches requires ad hoc preparation and also advises distrusting unitary models. The professional nature of higher studies is not the same in all cases, nor should it have the same kind of links with the local and territorial milieu, nor should this milieu have such a decisive influence on all higher education institutions.

University education stresses research promoted by the lecturers and students' research-based learning which do not necessarily suit other higher education institutions more attentive to certain aspects of professional life and the conditions of those students that choose the

corresponding options. Consequently, the diversity of the forms of higher education postulates a different approach to the concepts of quality and excellence which nevertheless should not be considered univocal and equal for everyone. The so-called 'research universities' favour excellence based on their research capacity and put less pressure on, and are different from, institutions that are devoted to the demands of the professional environment and to providing immediate applications to the economic and social activity that lies closest to them.

This point is not secondary, since diversification, in the same way as it selects resources for research institutions, also reserves the space they deserve to meet the insistent demands for education in aspects such as creativity, flexibility, adaptability and the ability to solve problems, all of which are characteristics that did not belong to the set of demands that used to be addressed towards higher education.

The task of research activity undertaken in the university setting is becoming more demanding, because an additional commitment is required of it. For example, reference is often made to the fact that the validity of research cannot be limited to obtaining duly controlled or logically deduced knowledge. There is also a need for the University to partake in the potential benefits of the results of knowledge for society, contrasted in different contexts and in broader fields. Social demand is penetrating the research process and influences the formulation of the problem and the evaluation of the results. In 2005, the European Commission (EC) warned that the insufficient number of researchers, especially in certain disciplines, would in the future pose a serious threat to the innovative strength of the EU, its ability to increase knowledge and future productivity gains, and therefore would hinder the attainment of the Lisbon and Barcelona objectives (EC, 2005b). The universities must prove that, while staying out of politics, avoiding dogmatic positions and getting round partial and private interests, they are institutions capable of integrating the knowledge needed to deal with matters while remaining sensitive to social concerns, beyond the demands of technological innovation.

The adaptation of research-focused teaching staff is not always in step with the current systems of selecting the most qualified staff to implement modern-day research policies. Moreover, if other factors are not considered, the institutions could shut themselves out of some research projects and, consequently, miss out on important aspects. Many projects require certain horizons and objectives to be met. The subject of research often has an interdisciplinary nature, and, in the end, the connection between different research centres erases the boundaries between what is basic – which was reserved for the universities –, what is applied and

what is technical. Here too, the mobility between the researchers of the different bodies that are to collaborate in the field of research and training is a necessity.

Technological innovation and social progress have territorial references; it is not difficult to realise the sense that higher education institutions can give to the development of a territory. Economic and social growth – explains a recent report by the Organisation for Economic Cooperation and Development (OECD) – stresses, first of all, human resources (and therefore, the promotion of knowledge) in order to foment research, making it fertile for technology transfer; secondly, the ability to absorb the available know-how when education and the development of human resources broaden it; and finally, cultural and community development, building the conditions favouring innovation.

2.6

Since 1983, Catalan universities continue to be governed in part according to cultural guidelines devised for other circumstances, corrected by the urgency of the events themselves. The correction of this starting point – in the preservation of rigidness – has not always conformed to a systematic vision, and therefore, inherited practices hang on despite the absence of any rational justification.

Rigidness has its consequences. A few are mentioned below:

> *Conditioning of the past trajectory*. Until thirty years ago, the stability of the university system was allowed to be transformed only when the changes envisioned kept the general structure intact. This structure did not quite work in its financial aspect due to the increase in the university population: attempts were made to solve this aspect via bilateral contacts between the funding administration and the entity. Special situations, such as the appearance of new universities or emphasis on certain actions, received extraordinary funding which was also obtained by means of such bilateral deals.

> *The supply side*. The preservation of the structure of the service of higher education that was defined years ago favoured a vision from the supply standpoint (creation, conservation or provision of the positions of academic staff, facilities – without paying attention to their amortisation, it should be noted in passing –, the attribution

of financial resources, etc.) without taking into account professional needs, the demands of new types of students, social and economic conditions, etc. Government attention was limited to ensuring university activity as just another aspect to be run by a ministry, without questioning its objectives.

> *Indifference with regard to results*. All is foreseeable when nothing changes and, therefore, the administration and management of university life adapted to the *ex ante* regulations which established and determined the requirements accepted for the proper running of the institution. With the rule dictated and the conditions fulfilled, it was presupposed that the actions taken would be the right ones. The ministries governed the universities according to a policy in which the decisions were made by the government and the bodies of each university acted as intermediaries between the ministers and the teaching and research staff. The University did not require the support of high-level professional management.

In the last thirty years, however, a different set of guidelines is prevailing. Nothing is foreseeable, and consequently, neither the past is a good guideline nor can regulations replace the decisions that must be made by the University if it wishes to protect itself from being marginalised. The Lisbon Declaration adopted in April 2007 by the European University Association (EUA) strictly and precisely establishes that adaptation and flexibility towards new demands are only possible in a setting of greater autonomy and sufficient funding.

Autonomy means independence in respect of others when it comes to making decisions. Therefore, decisions on how to shape themselves, specialise and make certain choices become inevitable. Decisions render the regulations obsolete.

Given the public nature of their funding, and due to the public service they provide, higher education institutions have to act efficiently in accordance with the targets that they themselves choose or those that are set in accordance with the social and economic policies of the government. Therefore, achieving results that come into line with targets puts the focus on the assessment of how universities are run and of the accreditation of the training given.

As a result, the universities are counted on to make an effort to obtain additional resources for their activity, without exempting the various government administrations from adopting measures of social equity. Public resources – which make up for the lion's share of European universities' budgets – are granted in accordance with targets and results

with regard to which the government cannot show indifference. Therefore, those responsible for the University and the University itself must answer to a politically defined society.

The multiplicity of missions and the dissemination of the results have brought the University closer to those who are interested and involved in the results being achieved, and they have been included in the way they are run. Finally, autonomy and specialisation make universities compete, but they also push them to cooperate through agreements with the aim of dividing their work.

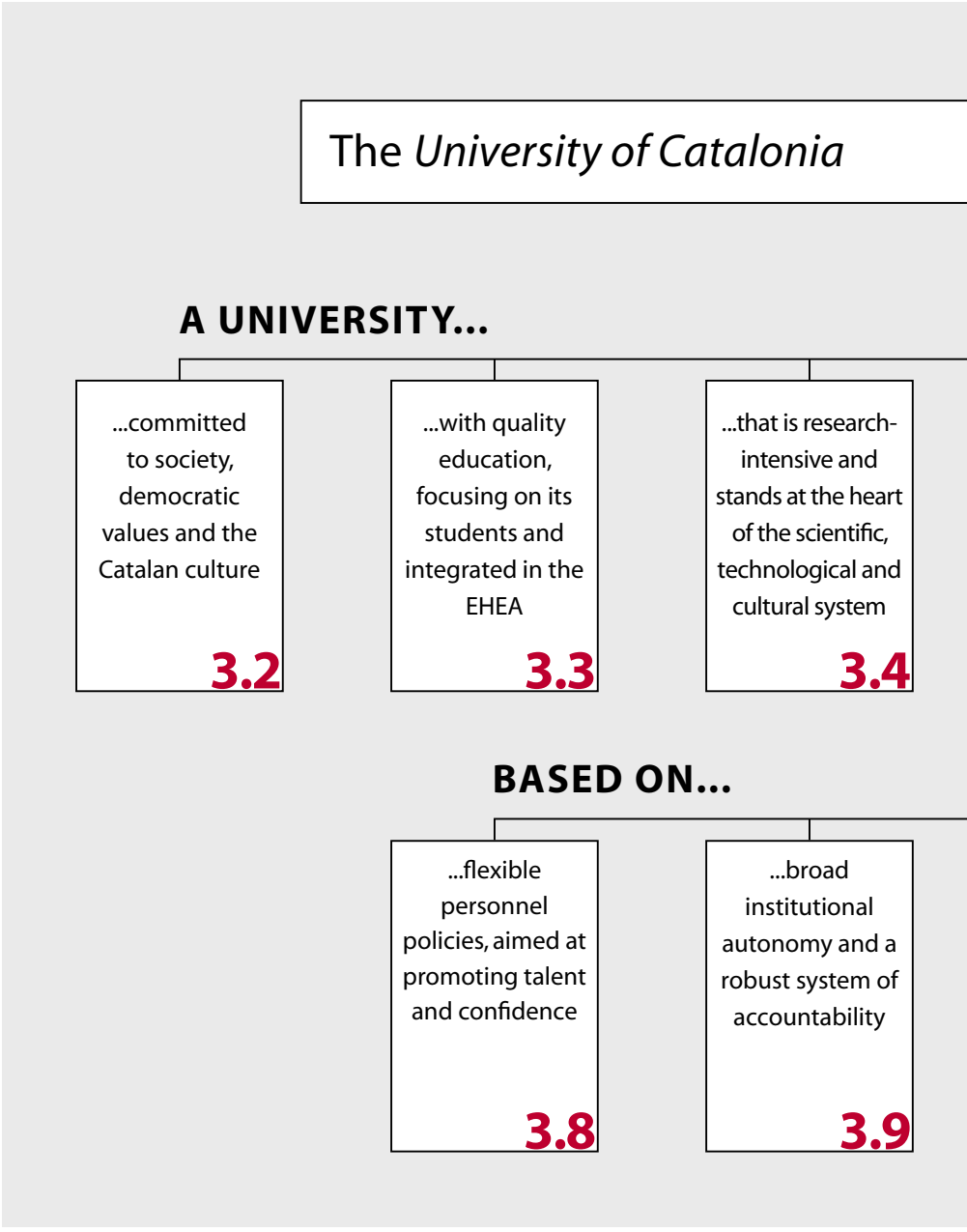
The gradual appearance of new procedures has not moved the universities out of their historical rut: other periods have witnessed equally visible transformations. The irreversible nature of the transformations seems to have been accepted, and for the time being, offers few alternatives. The citizens are waiting for the universities to respond now as they did in the past. This *White Paper* is a way of guaranteeing this.

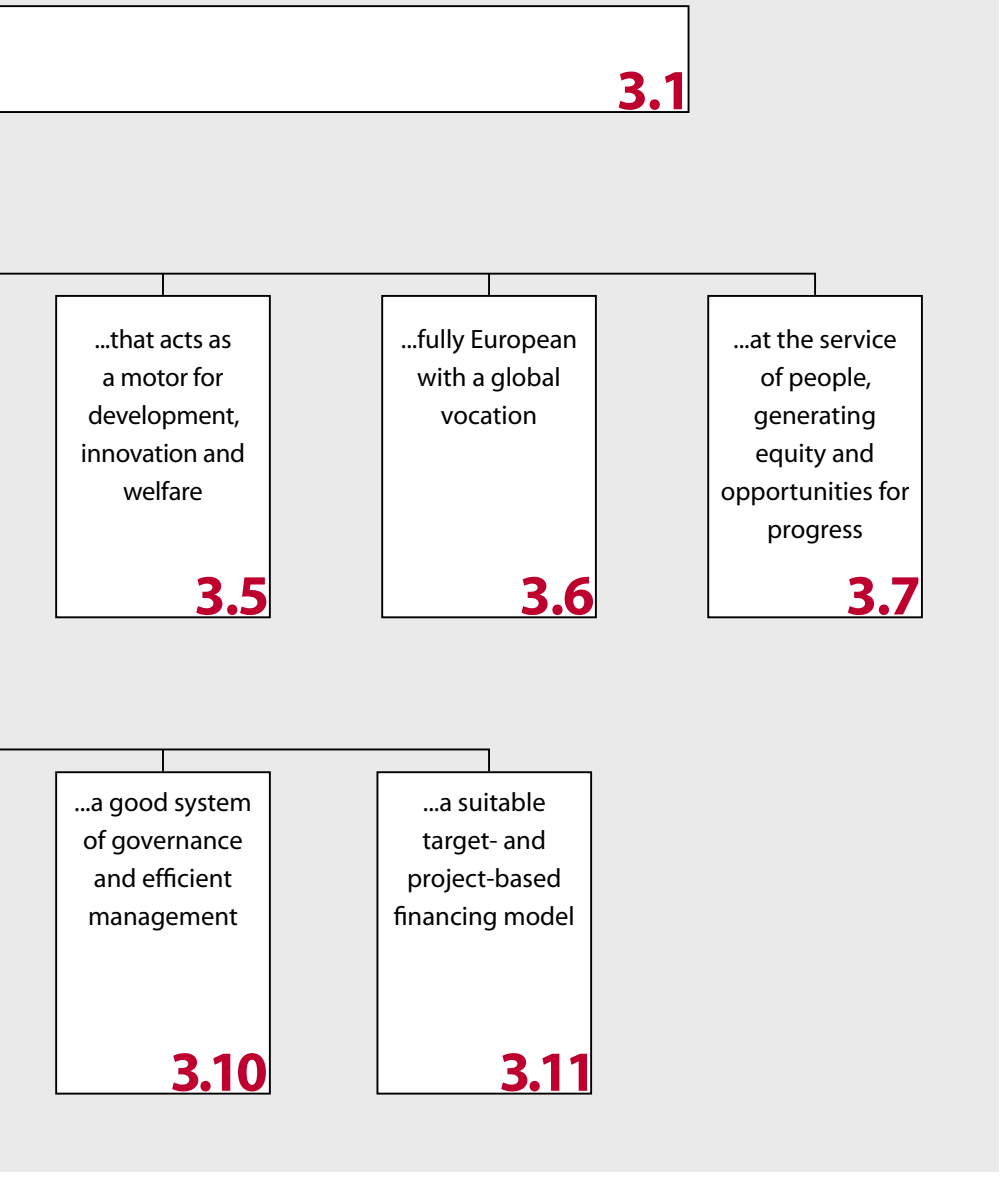
On 30 June 2006, the European Parliament stated that "The social and cultural responsibility of universities means more than mere responsiveness to the immediate demands of societies and the needs of the market, however important it may be to take these demands and needs seriously into account. It calls for a partnership in the definition of knowledge for society and implies that universities should continue to take a longer-term view and contribute to solving the fundamental issues of society as well as to finding remedies to immediate problems. [...] Accountability, transparency and quality assurance are preconditions for granting universities academic freedom and institutional autonomy" (Committee on Culture, Science and Education, 2006.)

3

TOWARDS A NEW MODEL OF CATALAN UNIVERSITY

GRAPHIC 1
Towards a new model of Catalan University.




3.1
...that acts as a motor for development, innovation and welfare
3.5
...fully European with a global vocation
3.6
...at the service of people, generating equity and opportunities for progress
3.7
...a good system of governance and efficient management
3.10
...a suitable target- and project-based financing model
3.11

3.1

The *University of Catalonia*

Hora és que anem e que usem de la ciència que havem; cor, si no n'usam, segons que devem, [...], fem contra consciència e contra ço que sabem, e no volem haver lo mèrit ni la glòria que haver porem si usam de nostra coneixença.[1]

Ramon Llull (1294)

Context and diagnosis

As the Llei d'Universitats de Catalunya (LUC), or Catalan Universities Law, expresses in its preamble, "The university system of Catalonia constitutes a reality with centuries of history. King James II created the General Study of Lleida, in 1300, which was guided by the principles of university autonomy and the universality of knowledge. Between 1533 and 1645, general studies or universities were also set up in Barcelona, Girona, Tarragona, Vic, Solsona and Tortosa. [...] The fall of Barcelona in 1714 brushed away the historical universities. During the 18th century, in the city of Barcelona the Board of Commerce promoted educational activity that was modern in spirit and, at the same time, practical. The much-demanded restoration of the Universitat de Barcelona in 1837 was a great step forward in the restoration of the university. [...] The restored University was, however, a bureaucratic University, and it was heavily centrally dependent: a provincial, subordinated University [...], where the reality of Catalonia met with difficulties expressing itself and its own language was totally absent."

Prior to the 1960s, the Spanish universities followed a Napoleonic model of organisation and all activities, which were highly centralised, were governed by State laws. Unfortunately, the Industrial Revolution and the

functional improvements implemented over the 19th century at some of the European universities that were more steeped in tradition did not affect the situation of the Spanish university.

In Catalonia, however, a glimmer of light appeared in 1933, following the establishment of the 2nd Republic on 14 April 1931. As a result of the development of the Statute of Catalonia, a process was begun to create the Universitat Autònoma de Barcelona, or Autonomous University of Barcelona, which in 1937 became officially known as the *University of Catalonia*. The Government of the Republic and the Generalitat de Catalunya approved the university statute in September 1933. This period, which is little known by the university community in Catalonia today, contributed one of the few glimpses of European modernity of the era. In any case, it did not last long at all and preceded a long period of dictatorship which ended with the passing of the LRU in 1983.

The university model arising from the LRU presents, on the one hand, one of the most modern characteristics of European universities: university autonomy and the freedom to choose programmes and priorities; on the other hand, it incorporates the Humboldtian vision of duality between classic teaching activity and research as a counterpoint to the creation of new knowledge. This duality was installed in much of Europe as of the creation of the University of Berlin by Wilhelm von Humboldt, German linguist, literary critic and education reformer in the early 19th century.

From that moment onward, changes took place very quickly, encouraged by the strong activities of the European and especially the American universities, which soon took over from the European ones, incorporating new functions and defining new profiles. The new model of a productive university is known as a research university. As many universities did not have a high level of research and did not encourage doctorates, the universities that were research universities introduced the term: Research-Intensive Institutions. This model proliferated as of 2002 in the form of an association of European universities with great scientific prestige known as the League of European Research Universities (LERU).

Most Catalan universities became research universities under the aegis of the State finance model. State R&D Plans were organised at first, generating the need to significantly increase publications of an international scope, followed by a focus on quality resulting from their increased level of impact. The promotion of the teaching and research staff and incentives policies have had a great effect in this regard, and were not modified until very recently, incorporating new goals, albeit gradually.

Currently, the Catalan public universities are highly regarded academically, scientifically and in terms of management. Their prestige has been confirmed by a great many studies carried out in recent years

(see, for example, the University System of Catalonia Quality Assurance Agency [AQU], 2004). Nowadays, all of the Catalan public universities have performed or are engaged in a process of external institutional assessment carried out by the EUA, which has represented a positive step towards analysing universities' capabilities, shortcomings and, at the same time, increasing their accountability (EUA 2007c, 2007d, 2005b, 2005c, 2005d, 2005e). Furthermore, the generalisation of quality assessment schemes, promoted jointly by the administrations and the universities, has proved to be one of the best decisions in the last ten years. Many of the results of these processes of assessment and monitoring of university activity highlight the leadership of Catalan universities within Spain. In 1996, the constitution of the AQU consortium was an important milestone in this regard.

In the field of education and teaching, in the last thirty years the Catalan public universities have shown a far-reaching ability to adapt studies to the new social, economic and cultural realities and necessities, and to advance in the integral education of university students, providing a greater capacity for the applicability of studies and facilitating first-rate tools and infrastructures to meet the needs of a true university of the masses. Here we should mention the Generalitat de Catalunya's plans for university investment, which have enabled this great leap forward in terms of quality of infrastructures and have made it possible to tend to the needs of an ever-increasing student body. The universities have made a considerable effort to design an offer of continuing education for graduates, professionals and all those who perceive education throughout their lives as a way of growing personally and professionally. Significantly, about 36% of today's students in Spain registering for postgraduate studies have done so at Catalan universities (Rectors' Conference of Spanish Universities – CRUE, 2006).

With regard to research, the data also point to a very healthy situation throughout Spain. For example, of the top ten Spanish universities that have been awarded competitive projects and funds from the 6th Framework Programme of the EU, half are Catalan, according to data from the Generalitat de Catalunya's European Knowledge Area Office. Likewise, at the start of 2008, of all scholarships awarded to young researchers by the ERC, known as "Starting Grants", over 60% of those granted in Spain went to Catalan researchers from universities and research centres.

If we take a look at a variety of league tables within the university environment, despite the reserve needed with regard to such classifications, what is true is that the results also show a good position of the Catalan public university system in comparison with the Spanish system. In the last league table published in the Times Higher Education Supplement

(World University Rankings, 2007), there were three Catalan universities in the top four hundred. Moreover, the UB is the only Spanish university to appear among the top two hundred of the league table published annually by the Jiao Tong University of Shanghai[2].

It would therefore seem clear that both due to quality of education, research and, more incipiently, innovation, the Catalan public University has advanced greatly since the LRU was enacted in 1983, in a great leap that has placed it, in many ways, at the top of the Spanish university system.

Nonetheless, by comparison with the most dynamic university systems in Europe and the United States, we find that there are many weak points and still a long way to go. It should be remembered that, in the globalised world in which we live, the regions of the world that are capable of educating their citizens better and producing higher-quality research will be in a better position to face the challenges of the future. Better education for university graduates invigorates the economic, social and cultural fabric, at the same time transforming society, which must become more mature and more advanced, with improved individual and collective welfare. The market works more efficiently and goods and services are of better quality. The social mechanisms are also strengthened: the axes of the welfare state make it possible to guarantee more equal opportunities for all. Better-informed and more culturally rounded citizens who are more capable of having their own judgement are a basic condition to ensuring democratic quality.

Scientific research also contributes to the aforementioned invigoration of the economic, social and cultural fabric. The regions of the world that are capable of generating the greatest innovation, such as Cambridge, Boston or California, to give a few examples, where creative, high-impact ideas are born, are also the areas of the world with the highest concentration of knowledge, where there are excellent university departments and research centres, where basic research and applied research manage to intertwine optimally.

In Catalonia, more people every day are aware that in order to start to head in this direction, there are a number of decisions that brook no further delay. Since the Bologna Declaration, which lay the groundwork for the constitution of the EHEA and the Lisbon Strategy aiming to turn the EU into the most competitive, most dynamic knowledge economy in the world and placing the universities at the core of the competitiveness and cohesion strategy, everyone is more aware of the steps that must be taken. Some European university systems with a far more solid tradition of academic excellence than ours have begun to work on certain lines or policies: adapting syllabi, improving financing and changing systems

of governance, all to create a more flexible, autonomous University that is capable of being accountable and creating alliances, networks and a variety of groups in order to be academically more solid and more visible on the world stage.

The policies in countries such as France, Germany, the Netherlands, Switzerland, Great Britain or the United States, show a trend towards the creation of alliances, grouping, and even mergers between universities or the coordination of inter-university projects in specific academic and scientific fields with the aim of gaining weight internationally and making the management of resources more efficient (see quotations and examples in the Bibliography and resources section).

Paris Universitas, for example, groups together six universities: the École Normale Supérieur, the École des Hautes Études en Sciences Sociales, the Université de Paris II, the Université de Paris III, the Université Pierre-et-Marie Curie and the Université Paris-Dauphine. The number of scientific publications and Nobel Prizewinners from this group rank it 10th on the Shanghai league table. The European Confederation of Upper-Rhine Universities (EUCOR) is a project that was got underway in 1989 based on a geographical nexus. It includes seven universities from three different countries: Freiburg and Karlsruhe (Germany), Basel (Switzerland), the three universities of Strasbourg, and Mulhouse-Colmar (France). Among other advantages, it stimulates the mobility of students and teaching and research staff, since students are obliged to take a certain number of credits outside their university, favouring language exchange and enabling the establishment of common courses and research projects, as well as sharing resources.

Another example is the University of Strasbourg Project. In Strasbourg, there are three universities: Louis Pasteur (Strasbourg 1), Marc Bloch (Strasbourg 2) and Robert Schuman (Strasbourg 3). In total, there are 42,000 students. Currently they are in the process of merging, in what is known as the UdS Project, which will culminate on 1 January 2009. It is a complex process from a technical and political point of view, which is done especially transparently, with a great deal of information and communication, and which seeks the participation of the whole of the three university communities. There is a monitoring committee and several inter-university work groups. The project is defined as a broad pilot test, a unique laboratory of university modernisation in the context of the major reforms of higher education in Europe. In parallel, the French authorities have introduced the objective of renovating and modernising the university in the public discourse and on the political agenda.

In addition to France, we can find numerous examples of this trend towards grouping together and sharing university projects in different

countries of Northern Europe and the United States, among others. In Norway, the Student Record System includes 65% of the students and twenty-two of the thirty-eight public universities and centres, while the Research Information System comprises 100% of its researchers, universities and research centres. For its part, the California State University System has embarked on a highly ambitious bid to share the infrastructures and the Information and Communication Technologies (ICTs) among all the system's public universities and colleges. For example, it has a Content Management System (CMS) which, in addition to unifying twenty-three data and procurement centres, has a single system of managing human resources and financial services, all outsourced to Unisys, based in Salt Lake City. California sees it as a cultural transition towards pragmatic decentralisation which involves great effort to collaborate wherever it makes sense to do so.

The Rectors' Conference of Swiss Universities (CRUS), in its project *Paysage universitaire Suisse: Stratégie 2005-2015,* explicitly mentions the importance of inter-university collaboration to turn Switzerland into one of the best areas in which to study and do research in Europe: "L'aménagement du paysage universitaire doit permettre d'en renforcer les atouts de manière ciblée, de mettre à jour de nouveaux potentiels, de concentrer les forces et de garantir la masse critique grâce à la collaboration et à la coordination, et par voie de conséquence d'encourager l'interdisciplinarité"[3] (CRUS, 2004).

Future outlook

Currently, the most common university model, in which it is independent and isolated, involves minimal economies of scale, very little need for standardisation and little or no culture of collaboration. The model of grouping together, on the other hand, favours synergies, economies of scale, the search for standards and the effort to collaborate and cooperate. Coordinated work, the capacity of connection and the development of strategic alliances become tools to improve the task of the universities in particular, and the system as a whole.

The need to be present in the world, for specialisation and complementarity between university institutions and efficiency in the management of limited resources, would advise moving towards strategies of collaboration and cooperation. The intensive use of ICTs and the adaptation to the EHEA and the ERA facilitate this strategy and become veritable agents of change.

The Catalan public system currently comprises eight autonomous, hardly interrelated universities. The configuration of these universities, with the qualifications they teach and the research groups that have been set up, is the result of their own particular histories and of a multitude of ad-hoc decisions, without a joint vision which should have been encouraged (but was not) by the Inter-University Council of Catalonia (CIC). We could say that the present situation is, as happens too often in our institutional system, excessively blinkered and a result of a series of minor decisions of the past with little strategic vision of the future (path-dependent). What must be demanded of the university policy of the Government of Catalonia and of Spain is that they should have an overview. But this is not just necessary; it must also be made clear that an overview must be generated and applied from the university system itself, including the members of the university community.

Assuming and believing in this last idea is what led the ACUP to promote a strategy of collaboration and a common project called *University of Catalonia* for all of the Catalan public universities. This common strategy enables working in a network to lay the foundations for a new reality. The *University of Catalonia* seeks to inherit the inspiration of the Generalitat of the Second Republic, which established in article 7.3 of the Statute of Autonomy of 1932 the ideal of full autonomy for the University, an ideal which the Republican University began to implement in those convulsive years.

The *University of Catalonia* is the first step of a strategy of collaboration, which is defined as an integrated system of innovative universities that promotes synergies and joint projects in education, research and the transfer of knowledge to society. It also promotes the excellence of the Catalan higher education sector and contributes to the economic, social and cultural needs of Catalonia, as well as its international presence.

In the immediate future, this strategy must enable the rethinking of university governance, internal structures and external relations, as well as the redefining of management in order to make it more flexible and efficient. In the coming years, the universities must find a way to interact with other institutions, with the business world and with society, which they have the mission of serving more efficiently. The culture of cooperation will be a great help in achieving this necessary change.

The instigation of the strategy of the *University of Catalonia* and the desire to work together to create a more cohesive, territorially balanced university system, which is coordinated and yet at the same time has unique profiles, represents the transversal message of this *White Paper* and will be present throughout the different chapters. Next we present a few concrete strategic lines, to which we wish to give special emphasis. The remaining proposals

also include reference to this general strategy, but are dealt with in the specific chapters on education, research, internationalisation or governance.

Strategies and projects

Strategy 1 > Rethink together the University in the global framework of knowledge: re-found the *University of Catalonia*

European universities are experiencing times of change with the application of the EHEA and the ERA. The Catalan universities must take advantage of the need to adapt to this new framework to profoundly transform their structure and the way they are run. It would be a mistake to undertake such a process alone. A joint strategy, under the *University of Catalonia* brand, will allow the creation of a coordinated university system implemented throughout Catalonia, with an international presence and with profiles in which the uniqueness and the strengths of each university become complementary and useful to the others.

This strategy is innovative in our country but it coincides with what is being applied by some of the advanced university systems of Europe and indeed the world. The trend towards concentration and the unification of effort and resources is the only way to ensure an increase in academic and research capabilities, as well as greater efficiency and international impact.

Project 1 > Efficient coordination of the university system

Establish a framework of relations with other universities or associative university structures and efficient dynamics between the CIC and the *University of Catalonia*.

Strategy 2 > Create an area of cooperation in which each university can accentuate its profile, in a complementary, networked system of universities

In Catalonia, there are four public universities located in Barcelona and its metropolitan area: Universitat de Barcelona (UB), Universitat Autònoma de Barcelona (UAB), Universitat Pompeu Fabra (UPF) and Universitat Politècnica de Catalunya (UPC, which also has centres outside the area). Three more are located farther away from the capital: Universitat de Girona (UdG), Universitat de Lleida (UdL) and Universitat Rovira i Virgili (URV). There is also the Universitat Oberta de Catalunya (UOC), which is the system's distance learning university. All – from the oldest to the

youngest – have shaped their profile and fulfil a function of integration in their regional sphere of influence, through education and research.

Unfortunately, the Catalan university system also has its inefficiencies and imbalances, especially with regard to the map of qualifications and in the intensity of research produced in the different scientific and technological fields. Catalonia, as a small country in the Europe of knowledge, must adopt a common strategy in order to overcome these inefficiencies and be able to project itself to the world coherently, with academic and scientific leadership abilities and with efficient, integrated management, including the map of research centres and the other players in the research and innovation system.

A policy of cooperation must facilitate initiatives that, beyond government action concerning the programming of studies and the creation of research centres, help to reduce deficits. Initiatives such as the creation of mechanisms to promote student and teaching and research staff mobility in the area or the generation of incentives to create shared qualifications and projects would be desirable.

An attitude of cooperation will also allow each institution to make a greater effort in the elements that define and strengthen its profile. If we want a cohesive country, the competition between university institutions has to take place within the framework of this basic cooperation.

Two realities that are under tension must be compatible: on the one hand, the undeniable fact that a cohesive country must ensure that the quality of life, access to services, the generation of wealth and cultural life reach all parts of its territory, and on the other, the fact that Catalonia is a country in which the city of Barcelona and its area of influence concentrates a number of citizens and resources that, necessarily, make it the main driving force of Catalonia. In the field of the universities, as in the others, we must seek a balance. If not, we as a country will become debilitated.

Project 2 > *University of Catalonia* Strategic Plan

Develop a joint strategy that defines the main areas in which each university wishes to attain a level of excellence. On the basis of the strategic plans of each university, the proposal is to summon, in 2009, a committee of international experts to analyse the public university system and make recommendations as to their chances of excellence, the areas and the future projects.

Project 3 > Boost inter-university cooperation

Urge the competent governments to make a reform of the regulations and so facilitate inter-university cooperation as well as instruments and mechanisms of financing to promote it, for example inter-university programme-contracts. Specifically, substantially increase the inter-university

mobility of the staff (teaching and research staff, administrative and service staff) and of students in the *University of Catalonia*.

Strategy 3 > Strengthen the articulated, common international presence of the Catalan public universities

The European model of society is a model of economic welfare with a high degree of social cohesion. This means that, with very few exceptions, the European model of universities tries to fit the quality of teaching and research in with a system that is based above all on work within a network and where quality is the sum of the different individualities. Conversely, the American model foments the appearance of a few institutions of excellence, to which it is difficult for most of the population to gain access. But the European model does not have to be incompatible with unique aspects, as the universities of the Netherlands, Scotland or the Scandinavian countries, to cite some clear examples, have already understood.

For the common international strategy to succeed, the competitive edge represented by the presence and the attraction of the city of Barcelona must be borne in mind. The Catalan capital is known and valued internationally, and this image of Barcelona must be taken advantage of as an international calling card for the Catalan universities. The key to success is to make the whole university system benefit from the city's international presence and underline that Barcelona is the capital of a rich, diverse country.

In recent years, some initiatives aspiring to excellence and internationalisation have enjoyed success. For example, the creation of research centres linked to the universities and with the direct support of the Generalitat, with broad institutional autonomy and suitable financing. This has allowed them to quickly achieve international impact and, therefore, incorporate top scientists in their specialities from around the world. The same applies to the Programme of the Catalan Institute for Research and Advanced Studies (ICREA): better conditions for research and more suitable salaries have made it possible to attract a significant number of world class researchers to the universities and research centres.

Project 4 > Joint international strategy

Build a joint international strategy which respects the individual qualities of each university and takes advantage of the international presence of the Catalan capital. Design joint communication policies that strengthen the visibility of the Catalan public university system in the world. Participate together in international bodies, networks and forums.

Strategy 4 > Project Catalonia and Barcelona as ideal places to pursue an internationally recognised postgraduate and doctoral education

In order to achieve this objective, there is a need to cooperate in the design of some fields in which research and international presence is solid enough and make a joint offer of master's and doctoral degree education, with a view to having them become studies of reference. These projects may have a varied geometry, depending on the profile of each university.

Currently, people from around the world wishing to study a Master of Business Administration (MBA) course regard Barcelona as an attractive possibility. We have to get Barcelona and also Catalonia to be points of reference for someone wishing to undertake advanced studies in other branches of science or technology. The Catalan university system has a sufficient level of research and institutional strength to be able to face this challenge. Three things are necessary, however: the governments need to give an incentive to cooperation initiatives; the determination and desire among the universities, with the conviction that they will benefit both as a whole and individually; and finally, getting it right when choosing and designing the offer, overcoming individual ambitions and acting with the generosity that is needed in projects like this one.

Project 5 > Postgraduate Inter-University Platform

Create a Postgraduate Inter-University Platform within ACUP, with the support of the public administrations. The aims: to promote studies of international reference, facilitate joint promotion and presence, establish common criteria for programming and management – especially internationally – and ensure facilities and resources that are conducive to receiving students and teaching staff from other countries.

Strategy 5 > Work together to take advantage of the economies of scale and increase efficiency through joint management

The Catalan university system already possesses some common infrastructures. For example: the Consortium of University Libraries of Catalonia (CBUC), the Supercomputing Centre of Catalonia (CESCA), the University Admissions Test Office, the Information Society Secretary's Campus Project, and, in some ways, the UOC itself, which aspires to work as a complementary university to the face-to-face system in accordance with the latter's needs.

These projects must be consolidated and, at the same time, new ones need to be developed, such as creating new involvement on such matters

as the promotion and deployment of commonly managed academic infrastructures; fostering joint research infrastructures and technology platforms in collaboration with research centres, science parks, technology centres, enterprise and administrations; or encouraging shared knowledge and the joint deployment of ICTs at the universities. In all of these fields, there are international experiences that may serve as reference points.

Project 6 > Observatory on university policies

Foster, from the ACUP, the development of studies, reports and systems of information that strengthen the Catalan public university system. Develop comparative studies, collecting the experiences and realities of other countries and university systems of reference, as an international observatory.

Project 7 > Joint platform of services

Promote common services and infrastructures in fields such as the Resource Centres for Learning and Research (CRAI), access to the University, teaching support, scientific/technical services, network communication, quality assessment and control, university publications, etc. The aim is to improve the quality of the system, take advantage of the economies of scale and increase management efficiency.

3.2

A University committed to society, democratic values and the Catalan culture

Higher education institutions have a key role to play in European society by contributing to equitable and sustainable development and to the culture of peace. They should act critically and objectively on the basis of rigour and merit, actively promoting intellectual and moral solidarity […]. In a world of deep transformations they have to foresee, anticipate and influence changes in all quarters of society.

UNESCO (1998)

Context and diagnosis

The modern universities are immersed in a changing society in which collective progress and welfare and the competitiveness of the countries and of the economic fabric increasingly depend on their capacity to generate and transmit knowledge. Knowledge and constant innovation are sources of welfare, development and wealth. As the universities are great generators of knowledge, it is fundamental to have a high-quality, integration-minded and flexible system of higher education which allows smooth relations between the university and scientific system and society as a whole.

The rectors of the European universities already highlighted the central role of the universities when, in 1988, they signed the *Magna Charta Universitatum* in which they manifested that "people and States should become more than ever aware of the part that universities will be called upon to play in a changing and increasingly international society". The *Magna Charta Universitatum* highlights that the future of humanity depends to a great extent on the cultural, scientific and technical development carried out at the universities and centres of culture, knowledge and scientific research. It expresses that the task of knowledge transmission to the new generations implies that the universities must serve all of society. Therefore, the cultural, social and economic future of our societies require

a considerable investment in higher education. In addition, it stresses the fact that the universities must educate the future generations to respect their environment and life itself. Explicitly, one of the four principles set out in the *Magna Charta Universitatum* states that the "University is the trustee of the European humanist tradition; its constant care is to attain universal knowledge; to fulfil its vocation it transcends geographical and political frontiers, and affirms the vital need for different cultures to know and influence each other".

Since the European Council met in Lisbon in March 2000, one of the fundamental goals of the EU has been the creation of a Europe based on knowledge. The Lisbon Agenda urges the participation of numerous sectors, among which the universities play an especially important role. Given that they find themselves at the heart of scientific research, education and innovation, the universities are key to the progress of society and of the knowledge economy. Within Europe, 35% of all researchers are working at universities, whereas in Catalonia the figure reaches 43.5% (Ciurana [*et al.*], 2006). Thus, the universities develop 80% of the basic research done in Europe and they train an increasingly large number of students, hence they contribute to improving education and culture and to strengthening the competitiveness of the economy. Nowadays, a third of Europeans work in sectors that demand a high level of knowledge and these sectors have contributed to the creation of half of the new jobs which were generated between 1999 and 2000 (EC, 2003b).

Likewise, the universities contribute to achieving other goals of the Lisbon Strategy, specifically occupation, cohesion and social progress, as well as an improvement in the general level of education in Europe. Currently, the number of young people holding a university qualification far surpasses that of previous generations. Approximately 23% of Catalans between the age of thirty-five and thirty-nine have a higher qualification, whereas the percentage applicable to those aged between fifty-five and fifty-nine is just 14%. When considering the whole of the population aged over twenty, the rate of occupation of holders of higher qualifications is 81.84%, approximately twenty-four percentage points above the overall average for all levels of education. Lastly, it should be stressed that the rate of unemployment among higher qualification holders stands at 5.66%, decreasing to 4.35% among holders of PhDs. These figures are between three and four percentage points below the overall rate of unemployment, which stands at 8.47% (data taken from INE referring to the first quarter of 2007).

Beyond the debate over the role to be played by the universities in society and in the knowledge economy, and how they can act as a social

catalyst, there is another, increasingly important concept when speaking of the mission of the universities: institutional social responsibility. It is not enough to just educate the professionals of the future and make knowledge advance through research that is useful to society. These are the intrinsic aims in the University: commitment to society goes further. The University needs to have its doors open and strive to allow everyone to be able to gain access to it in equal conditions. The University needs to apply policies of flexible labour for its workers. The University must be responsible for the management of the waste it produces, that is, conscious of the energy resources it consumes. Above all, it must foment a critical spirit among the students and it must ask itself which are the applications that the research it does will have. These are the aspects, among others, that constitute the commitment of the University to society and that make the University truly responsible.

In order to be able to fulfil the new role played by the University in society, there is a need for solid academic and social values that are reflected in their contributions to society. The universities have been, and must continue to be, leading institutions in the defence of democratic values, of progress, freedom and justice for people and peoples around the world. In Catalonia, the defence of these values by the universities was especially intense during the Franco dictatorship, since they were a critical, democracy-supporting voice against a totalitarian state which did not acknowledge bare minimum of liberties. The universities helped bring together social, cultural and political movements for the transformation to democracy, the respect for human rights and individual and collective progress. They also claimed the personality of Catalonia as a nation with its own language, culture and *raison d'être*.

The commitment by Catalan universities to the country, the language and the culture goes beyond the Franco era and stretches all the way back to its origins. In a country that has no State structure or the mechanisms for linguistic promotion that states dispose of, and where the language has been persecuted and prohibited for decades, the role of the universities has been fundamental. Schools and the media have done a huge job extending and disseminating the Catalan language, and it must also be acknowledged that the University has played a key role in its normalisation in the field of science and knowledge. From their stance of respect for personal freedom of expression, the Catalan universities have always assumed Catalan as their own language. The job done by the Vives Network of Universities must also be highlighted for having established an important degree of collaboration and involvement with the rest of the Catalan-speaking universities.

Future outlook

According to its enlightened, democratic tradition, the University must be committed to the society that surrounds it, makes it possible and justifies its reason for being. In fact, this social commitment is part of its identity. Today, no one doubts that higher education is a key factor for human development and social transformation.

At a time of profound changes and in an increasingly interconnected, networked world, the pace as well as the space of social, cultural, economic, political and environmental developments has increased to such an extent that the University must make an effort so as not to be left aside or observe it all from an ivory tower. On the other hand, the frequency, volume and speed of exchange and mobility of goods and people has created a situation in which the University cannot afford to be isolated and distanced if it wishes to maintain a critical attitude and be a driving force of progress for society.

The universities must have academic autonomy and freedom to be able to contribute creatively and innovatively to the future of the societies in which they operate. The societies that have not taken this into account have lagged behind, and the universities that have forgotten this have too. In its Lisbon Declaration, the EUA recalls that only some well-financed autonomous universities will have the sufficient strength to be able to make society advance towards the Europe of knowledge (EUA, 2007). Chapters 9 and 11 of this book specifically insist on the subject of autonomy, accountability and finance.

In any case, the traditional values of the University, such as autonomy, academic freedom and excellence, are no longer enough to contribute to strengthening a free science and society. The universities cannot live closed in on each other and they must commit themselves to the societies they represent. Nor can they be institutions that focus only on the creation and dissemination of knowledge. Rather they must be at the service of the society and its needs, an essential condition for the creation and dissemination of knowledge to achieve their maximum relevance. Knowing how to combine knowledge and service to society, the delicate balance between thinking and acting, academic rigor and a commitment to the world become essential challenges.

The former Secretary General of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) Federico Mayor Zaragoza often considers the evolution of the University from the ivory tower of the elites of knowledge to the lighthouse, the lookout post that alerts and anticipates instead of adapting *a posteriori*, which is an especially

necessary condition in our time, a time of rapid evolutions and profound social, political, religious, cultural and moral transformations.

UNESCO insists on the commitment and service to society as a mission of the University, especially in activities that help eradicate poverty, intolerance, violence, illiteracy, starvation or the degradation of the environment. According to UNESCO, higher education ought to have as its objective the creation of a changing society made up of cultivated, motivated and integrated individuals, who love humanity and are guided by wisdom (World Conference on Higher Education – UNESCO, 1998). The universities are, therefore, institutions for the transmission of democratic and civic values, and powerful instruments for a critical analysis of society, science and culture.

In a knowledge-intensive but at the same time complex and diverse society like ours, multidisciplinary education must be a reality, not an intention, since it is the only methodological approach that will allow us to understand the complexity. We are speaking of a new concept of teaching that includes multidisciplinary education throughout life, multiple qualifications and cooperation and commitment, not just as an ethical obligation, but also as a source of knowledge. A new model of education that helps to do without the easy certainties provided by training, language and social and national context which all too often prevent us from seeing and understanding detached realities.

Strategies and projects

Strategy 6 > Strengthen the fundamental role of the universities in social commitment and progress

The universities create and transmit necessary knowledge for social and economic welfare on a local, regional and global level, and they also cultivate the values and culture of our societies. As a part of a society committed to instruction and democracy, the universities play an important role in their development. This is why they must facilitate permanent, critical and rational dialogue between the teaching and research staff and the students, but also between science and other areas of society. In addition to providing specific knowledge in the different areas of science, the University must be aware of its democratic and enlightened tradition, and reinvent it every day to strengthen a free science in a free, democratic society that defends progress and welfare.

Strategy 7 > Be an inclusive University, capable of formulating policies for all

The Catalan university system must be open to everyone, to all citizens, at any time of their life or career. To achieve this, active policies must be encouraged that guarantee or at least facilitate access by groups with difficulties. It is not enough just to say that the doors of the University are open to all. One must ask oneself who is missing or who does not reach it and develop effective, positive policies. There is a need to develop campuses that are accessible to the disabled, create programmes addressed to collectives with certain needs (immigrants, the elderly, etc.) and continue the fight against the well-known existing discrimination in our society, such as sexism (see Chapter 7 on the University at the service of people).

Project 8 > Joint programme to remove architectural barriers

Assume a public commitment so that there are no architectural barriers at the universities that make up the *University of Catalonia*.

Strategy 8 > Educate according to values and promote critical thinking

The University must educate students in values such as the democratic political culture, the equality of the sexes, the culture of peace, human rights, respect, tolerance and social policy. These values must be conveyed throughout the university period, regardless of the studies being followed.

Moreover, the universities recognise that encouraging critical spirit and the ability to analyse the problems of society is an important task. The discourse of enterprise and innovation now predominates, but often, the importance of the critical spirit is overlooked. As recalled by the previously cited UNESCO declaration, the universities must educate students so that they are "well informed and deeply motivated citizens, who can think critically, analyse problems of society, look for solutions to the problems of society, apply them and accept social responsibilities". In order to achieve these goals, some studies need to be reformulated using new methods of content design. Thus, there is a need to promote new ways of teaching that facilitate the acquisition of competencies and skills (see Chapter 3 on university education).

Project 9 > *University of Catalonia* code of ethics

Draft a *University of Catalonia* code of ethics that includes students' rights and duties.

Strategy 9 > A University committed to the Catalan culture and nation

The *University of Catalonia* must be a University that is open to the world and, at the same time, fully rooted in the country from which it takes its name. Historically things have been like this: the links with the country and the social, economic and cultural reality have been strong. Since the year 1300, when King James II created the General Study of Lleida, the Catalan universities have often played a catalytic role, like in the era of renovation and modernisation at the beginning of the 20th century or during the resistance to the Franco regime. There is a need to continue to maintain and strengthen the identity of Catalonia as a nation that counts in the Europe of knowledge, acting as a driving force and vanguard of its cultural, scientific, social, artistic and technical dynamism.

Currently, at a time when increased mobility and the appearance on the scene of the EHEA are helping to break barriers and offer a whole new world of possibilities to the Catalan universities, they need to exercise their commitment to the language and culture of the country. The *University of Catalonia* seeks to be a multilingual campus where the use of Catalan as its own language is not an impediment, but rather the opposite, namely an added value with its own voice before Europe and the world.

Project 10> Multilingualism in the classroom and on the campuses

In line with the EU strategy promoting multilingualism, promote concrete actions to facilitate the entry of third languages to the classrooms, campuses and research. In this process, establish the necessary mechanisms as to ensure that Catalan, as a weaker language, is not harmed or marginalised.

Project 11 > University reference manuals in Catalan

Promote the publication of technical and scientific manuals of international reference in the Catalan language jointly between the Generalitat de Catalunya, the Catalan universities and other agents.

Strategy 10 > Promote dialogue between different cultures and knowledge

As a result of the new migration waves, Catalan society, like many others, is increasingly multiethnic and multicultural. The coexistence and the prosperity of these societies will, to a great extent, depend on the fact that each individual learns to find out about, respect and understand other cultures, values, customs and religions. This is an educational process and it would be a mistake to reduce it to the initial stages: higher education also plays an important role when promoting intercultural dialogue, apart from turning it into the subject of research.

Moreover, the specialisation of the different scientific disciplines is increasingly greater, so the current University cannot consider itself as the uniting place for all the sciences (*universitas litterarum*), as it was once described by idealist philosopher Friedrich Schleiermacher. Today, an isolated analysis within a single scientific field does not correspond to the variety and complexity of the world in which we live. Interdisciplinarity is essential in order to find suitable responses to the challenges facing our society. Therefore, it is of utmost importance to promote inter-scientific dialogue, which has dwindled over the years due to excessive specialisation.

Project 12 > Annual university day of celebration: the *Dies academicus*
Organise once a year a *Dies academicus* to increase the dialogue between the different disciplines and between the University and society, each year devoted to a concrete subject, with the participation of experts from different scientific, political and social fields.

Strategy 11 > Create a culture for sustainable development and the protection of the environment

The universities must be examples to follow in matters that are of vital importance for the future, such as all those concerning waste management and the protection of the environment. An institutional position is necessary and students and the other individuals that make up the university community must be directly involved. This attitude must transversally impregnate the whole organisation and it must affect everything from the construction of new buildings to the management of the full water cycle, to reflection regarding the use of technology or the research used.

The assumption of this new culture will only be possible if it is done in collaboration with other institutions, enterprises and administrations. At the same time, the universities must promote investigation and innovation in fields such as renewable energy, new energy sources, water management, clean technologies, waste management and the management of the forests and ecosystems.

Project 13> Sustainable *University of Catalonia* programme
Jointly promote education, research and dissemination concerning sustainability. Improve sustainable and environmental practices in each university and envisage the third mission of the University in this area.

Strategy 12 > Promote an integrated, structured policy for universities concerning cooperation and development matters

The Millennium Development Goals (MDG), formulated by the United Nations in 2000, recognise the great importance of the role played by education in the development of countries. The international community proposed achieving universal primary education (objective no. 2) prior to the year 2015. Therefore, the effort made with regard to education matters in recent years has been concentrated above all on primary education. Likewise, recently there has been a process of awareness raising that acknowledges that not only must there be investment in primary education, but there is also a need to improve the whole system of education, especially higher education, in the developing countries. It is precisely in this area that European universities play a key role given that it is the area they know best and in which they act daily.

If we observe the setting of international cooperation for development, we can detect another growing trend in recent years: replacing small, isolated projects, with often reduced impact, with broad integral programmes coordinated with other players and, therefore, with a greater impact.

All of the Catalan public universities have centres or services devoted to cooperation with the essential aim of contributing to human development in partner countries. To increase the impact of their activities, the *University of Catalonia* wishes to coordinate the projects aimed at cooperation for development and promote integral programmes of greater scope, on which efforts must concentrate. Thus, the *University of Catalonia* shall foster specific actions in the field of higher education, as this is the area best known by the universities and where, consequently, they may provide added value.

Project 14 > *University of Catalonia* solidarity programme

Based on previous diagnosis, promote a joint university cooperation programme for development which concentrates especially on the academic field, in collaboration with the competent public bodies. The main goal of this programme is to concentrate efforts and increase the impact of university cooperation.

3.3

A University with quality education, focusing on its students and integrated in the EHEA

Face aux multiples défis de l'avenir, l'éducation apparaît comme un atout indispensable pour permettre à l'humanité de progresser vers les idéaux de paix, de liberté et de justice sociale.[4]

JACQUES DELORS (1997)

Context and diagnosis

Education, being the University's prime mission, is undergoing change due to four main causes: the construction of the EHEA, the fluctuation of a labour market linked to social and economic needs and the new knowledge society, the increasingly diverse student profile and, lastly, the paradigm of continuing or lifelong learning.

▸ The construction of the EHEA

The Bologna Declaration is the starting point of a substantial change in the European university system, both as regards the structure of university studies and, above all, their reason for being. Specifically, it represents the step from an education based on teaching, with emphasis on the teaching and research staff and the acquisition and conveyance of knowledge to an education based on learning, the student and his or her capacity to learn. It is a historical moment for university education, a time which must be taken advantage of decisively and bravely in order to improve syllabi and teaching methods and thus educate better-prepared and educated graduates and citizens.

Table 3 shows the countries that now participate directly in the construction of the EHEA, with specific information on the new structure

of university studies and the state of development of the EHEA. Most significantly, it can be observed that the vast majority of countries has backed a structure of studies in which bachelor's degrees last three years and postgraduate degrees (master's) two. The fact that in Spain a model of a different structure has been adopted (four plus one) leaves our country in a relatively isolated situation which may hinder university mobility. To this end, the Catalan public universities reiterate the backing of a flexible model of structuring qualifications to allow the maximum adaptation to the most widespread structure in most European countries.

According to the data supplied by the latest Trends and Stocktaking reports (Crosier, Purser, Smidt, 2007), currently over 80% of the universities and other European higher education institutions surveyed have developed the study structure into three cycles. In Spain, in the last year, the regulatory bases have been established for the programming of new studies adapted to the EHEA.

In Catalonia, the then Department of Universities, Research and Information Society (DURSI), the AQU and the universities signed, in May 2004, a collaboration agreement to develop, as of the 2004-2005 academic year, a pilot scheme of qualifications adapted to the future EHEA. When in early 2005 the Spanish Government passed the graduate and postgraduate decrees, the DURSI decided it was necessary for the Catalan universities to consider the establishment of Official Postgraduate Programmes with master's and doctoral qualifications that were fully integrated in the EHEA for the 2005-2006 academic year. With this purpose, the AQU established the assessment procedure on the academic dimension of the proposals made by the universities. Having performed this assessment, as of the 2006-2007 academic year, the DURSI passed the establishment of official master's degrees, integrated in the different postgraduate programmes, of which the total offer by Catalan universities is 378 for the 2008-2009 academic year. Of these, forty-one are given integrally in English. In addition, as of the 2008-2009 academic year, the first thirty-five degree qualifications adapted to the new framework will be given.

▸ Changes in the labour market of the new knowledge society

University education must also adapt to the demands of today's labour market, which is quite different from that of just two or three decades ago. Nowadays, the market requires qualified workers who are far more versatile and adaptable to rapidly changing circumstances, with personal aptitudes and abilities that complement specific knowledge. Aptitudes such as leadership capacity, team and project management, proper oral and written communication skills, a command of technology and the ability to synthesise and analyse have become important.

TABLE 3

Countries that participate in the construction of the EHEA, structure and status of adaptation.

Country	*Structure*	*State of adaptation*
Albania	3+2 & 4+1	Advanced
Andorra	3+2	Advanced
Armenia	4+2	Early stage
Austria	3+2	Advanced
Azerbaijan	n/a	Advanced
Belgium (Flanders)	3+1	Advanced
Belgium (Walloon)	3+1/2	Advanced
Bosnia and Herzegovina	3+2	Advanced
Bulgaria	4+1	Finished
Croatia	3+2	Advanced
Cyprus	4+2	Finished
Czech Republic	3+2	Advanced
Denmark	3+2	Finished
Estonia	3+2	Advanced
Finland	3+2	Finished
France	3+2	Advanced
Georgia	3+2	Advanced
Germany	3+2	Advanced
Greece	4+2	Finished
Holland	3+1/2	Finished
Hungary	3+2	Advanced
Iceland	3+2	Finished
Ireland	3+2 & 4+1	Finished
Italy	3+2	Finished
Latvia	3+2 & 4+1	Finished
Liechtenstein	3+2	Does not require adaptation
Lithuania	4+1/2	Finished
Luxembourg	3+2 & 4+1	Finished
Macedonia	3+2	Advanced
Malta	3+2	Finished
Moldavia	4+1	Early stage
Montenegro	3+2	Advanced
Norway	3+2	Finished
Poland	3+2	Advanced
Portugal	3+2	Advanced
Romania	3+2	Advanced
Russia	4+1	Early stage
Serbia	3+2	Advanced
Slovakia	3+2	Advanced
Slovenia	3+2	Advanced
Spain	4+1	Early stage
Sweden	3+2	Finished
Switzerland	3+2	Advanced
Turkey	4+2	Finished
United Kingdom	3+1	Does not require adaptation
Ukraine	4+1	Advanced

SOURCES > Eurydice[5], UAB[6].

The set of knowledge, abilities and attitudes needed by a professional to perform a job adequately is described by the concept of competencies. According to Bunk, "A person has occupational competency if they have the knowledge, the skills and the attitudes needed to develop in a given occupation, if they are able to carry out tasks with independence and flexibility, and if they have the willingness and capacity to broaden their scope of work within the organisational structure in which they function" (Bunk, 1994).

An initial collective response to the Bologna Declaration was the Tuning Project[7] (Tuning the Educational Structures in Europe), coordinated by the universities of Deusto and Groningen, in which over a hundred European universities participated with the support of the EUA and funding by the EU's Socrates programme. Among other issues, it dealt with determining points of reference for the generic and specific competencies of a series of qualifications in several thematic areas. The procedure consisted of surveying graduates, occupiers and academics and classifying the most necessary competencies for the education of graduates.

In the pedagogical model of the traditional University, knowledge, and in particular theoretical knowledge, represents the main educational goal. In today's context, the universities must train individuals and professionals in a far broader set of competencies, including knowledge, but also aptitudes and attitudes. Examples of transversal competencies are shown in the following tables:

TABLE 4

Evaluation by occupiers of the competencies required (scores between 1 and 5).

Independent work	4.3
Ability to solve problems	4.3
Oral communication skills	4.3
Work under pressure	4.3
Assume responsibilities, decision-making	4.2
Teamwork	4.2
Time management	4.1
Firmness, resolution, persistence	4.1
Exactness, attention to detail	4.1
Planning, coordination and organisation	4.1
Initiative	4.1
Adaptability	4.1
Personal involvement with work	4.1
Loyalty, honesty	4.1
Written communication skills	4.1

SOURCE > García Montalvo, 2008.

TABLE 5

Evaluation by students of required competencies (ranging from least to most), with the evaluation of the level to which they were acquired and the difference between the two (scores between 1 and 5).

	Acquired	*Required*	*Difference*
Negotiation skills	2.6	3.7	-1.1
Planning, coordination and organisation	3.1	4.1	-1.0
Assume responsibilities, decision-making	3.4	4.2	-0.9
Time management	3.3	4.1	-0.8
Work under pressure	3.5	4.3	-0.8
Ability to reason in economic terms	2.8	3.5	-0.8
Leadership	2.8	3.6	-0.7
Problem solving skills	3.6	4.3	-0.7
Oral communication skills	3.6	4.3	-0.7
Broad general knowledge	3.7	3.6	0.1
Theoretical knowledge of the specific field	3.8	3.7	0.1
Learning skills	4.2	4.0	0.2
Proficiency in foreign languages	3.1	2.8	0.2

SOURCE > García Montalvo, 2008.

The diversity of students and their academic performance

As can be seen in the tables below, there is a worldwide tendency to generalise higher education, with a high percentage of the population deciding to pursue university studies.

TABLE 6

Some figures on higher education in the EU-19, Germany, the United States and Spain (2004).

	EU-19	*Germany*	*United States*	*Spain*
Number of higher education students (HES)*	16,033	2,330	16,900	1,839
HES/1000 habitants	36.48	28.26	57.02	42.40
Number of university higher education students (UHES)*	14,035	1,981	12,950	1,507
UHES/1000 habitants	36.38	24.03	43.59	34.74

SOURCE > Ministry of Education and Science (MEC), 2007b. *in thousands.

TABLE 7

Population with higher education (%).

	25-34 years of age	*55-64 years of age*	*Increase*
Germany	22	21	5%
Canada	51	32	59%
Catalonia	**28**	**14**	**100%**
Korea	41	9	352%
Spain	37	11	249%
United States	39	33	18%
France	36	15	138%
Italy	12	7	85%
Japan	50	18	179%
Norway	40	22	83%
United Kingdom	31	20	58%
Sweden	39	25	55%

SOURCE > OECD, data for Catalonia: INE.

If we add demographic changes and migratory movements to this generalisation, it is clear that the typological complexity of students has increased and will continue to do so in the future. The students have an increasingly varied social and cultural background, students' ages have ceased to be homogeneous and the percentage of part time students has increased notably. Another aspect that deserves priority attention is the scarce fluidity of some university studies. Thus, for example, the total university dropout rate for the 2002-2003 academic year was higher than 10%; at the same time, there is a high number of students who change courses, and many take far longer to finish their studies than that indicated in the syllabi.

▸ The paradigm of continuing or lifelong learning

The new knowledge society, apart from having a direct influence on the labour market and the type of professional it requires, has also turned the continuous updating of knowledge and continuing education into a need. Years ago, the knowledge a person acquired at University could be of use throughout their life. Today, it is the basis and starting point, but labour, economic and social contexts change too quickly to be considered permanent. At the same time, a more cultivated society and individuals seek opportunities for continuing education and growing cultural and scientific curiosity. In the area of continuing education and career reorientation, the offering of blended and virtual studies by the

different universities is especially useful, above all, by universities which specialise in distance learning, like the UOC.

Future outlook

There are four areas on which university education must focus its efforts in the coming years. In the first place, Catalonia must be transformed into a country of university graduates. Second, the academic offer must be diversified, flexible, take citizens' demands and expectations into account. Third, the EHEA must be taken as a new framework for academic education. Finally, high-quality, student-focused education must be offered.

Any country that wishes to be competitive and a leader must back its University. Hence, Catalonia must continue to urge its citizens to undertake higher educational studies (currently approximately 12% of the whole of the population of Catalonia has completed higher studies, whereas 28% of the population aged between twenty-five and thirty-four, have completed higher studies, according to the Institute of Statistics of Catalonia (Idescat). Catalonia must be a country of university graduates and the *University of Catalonia* must shape itself as a university system open to all strata of society with a broad range of offerings for people of all ages, not as an elitist system. If this is so, it will be a sign of present and future wealth. A population with university studies is an essential, key piece in the construction of an advanced democratic society and in a knowledge-based economy.

A University with a lot of students must offer a flexible diversity of academic studies designed to meet the citizens' demands and expectations and those of the labour market at the same time. The offer must be varied, first of all, in terms of the duration and the requirements of the studies. Relatively short studies focusing on job placement (240 European Credit Transfer System –ECTS– credits) must coexist with advanced studies (master's, doctorates). An individual will choose one/some or another/others in accordance with their preferences, available time or abilities. Also, with regard to specialisation, generalist and more specialised studies must coexist. The initial levels must be more generalist, giving way to later specialisation, career reorientation – which is increasingly important – and continuing education. Finally, universities cannot concentrate all of their offer in a sole geographical point: it is positive for Catalonia for there to be face-to-face higher studies outside Barcelona, complemented by the UOC's distance learning offer.

Maximum communication and transparency must be applied to this broad and varied offer. Information as to the offer of university studies, their contents and the subsequent possibilities for each study must reach everyone: professional areas of application, average length of time before finding work, salary indicators, etc. It is also necessary for there to be maximum transparency in respect of the efficiency and academic results for each study, including dropout and failure rates.

The construction of the EHEA represents a great opportunity. The *University of Catalonia* should know how to take advantage of it. The new regulatory framework gives ample autonomy to the universities to decide as to their academic offer and the syllabi. It also represents a three-stage, modular system (graduate, master's and doctorate), designed with the idea that broad levels of society will follow higher studies and can continue them throughout their lives. The EHEA also facilitates mobility within the EU and promotes a model of education which boosts competencies and abilities as well as knowledge. This is why new systems of teaching programming and new assessment methods are necessary. Apart from designing and applying these new systems, the *University of Catalonia* will benefit more from the EHEA challenge if it works with recognised accreditations in Europe, offers shared studies and double degrees with other European universities and encourages an active policy of student, teaching and research staff and administrative and service staff mobility. By 2015, one in three Catalan graduates ought to have spent a study period at a foreign university.

The EHEA is driving the universities towards high-quality, student-focused education. First, to get there, the universities must devote more resources to this (see Chapter 11 on university funding). At the same time, the teaching activity in the academic career of the teaching and research staff must be more highly valued. Quality teaching requires preparation, incentives and, therefore, assessment too. In many cases, there is a need to offer tools and resources to improve the pedagogical training of the teaching and research staff (see project 24). Moreover, university education can never be isolated: there must be a permanent connection with the previous stages of education (especially at secondary education and vocational training) and an active observatory of the labour market and the social needs and demands, as well as research groups and activities.

Strategies and projects

Strategy 13 > Advance towards an integrated offer of university qualifications in Catalonia within the EHEA framework

The period of adaptation to the EHEA is an excellent opportunity to define and reach a consensus on the criteria and mechanisms that are to govern the new offer of university qualifications. In this process, the goal must be to agree as to a global, rational and integrated offer, yet respecting and strengthening the singularity and specialisation of each university that is a part of the *University of Catalonia*. Based on quality of education, coherence, critical mass and efficiency criteria, each university must leave its own mark of personality deriving from its specialisation. Each university must be able to define, through its strategic positioning, to which degree of intensity and intentionality it wishes to be given over to degree, postgraduate and doctorate teaching, research or transfer and innovation, in accordance with an integral university policy promoted by the Government of the Generalitat and agreed to in the framework of the CIC. At the *University of Catalonia* we are backing a flexible model for structuring qualifications in order to adapt them as much as possible to the most widespread structure in other European countries.

The assessment of universities, which is essential for due accountability, must be done on the basis of this diversity, since the indicators used today to assess the universities mainly favour criteria of uniformity. Hence, a new system of indicators must be established which foments the differentiation and specialisation of the universities.

Likewise, if the offer of qualifications is diversified, it would seem logical for University access mechanisms to follow suit. Student selection for the different levels of studies should be the direct competency of the universities, based on different criteria, such as a personal interview combined with the qualifications obtained in previous studies, selection processes, letters of recommendation, etc. It would also be good to enhance the interrelationship with the stages of education prior to University and especially strengthen the bridges with vocational training.

All of this process requires earmarked economic resources, and for this reason the Catalan society must be aware of the change it is asking of the University. Only this knowledge and the awareness of the importance of the changes that are being carried out will facilitate adequate, sustainable financing.

Project 15 > Offer of university system qualifications

Promote new criteria and mechanisms for an offer of qualifications of the university system that facilitate:

> An integrated and complementary system, promoting the efficiency and the economy of resources.
> The specialisation and diversification of the University, strengthening academic excellence and quality education.
> Be conducive to university autonomy and the assessment of qualifications *ex post*.
> The adaptation to the social and economic needs and those of the labour market.
> The provision of joint qualifications of several universities.

Strategy 14 > Foment undergraduate studies attending to social demands and needs, with more generalist entry profiles and more specialist leaving profiles

The first years of study will have to be rather generalist. This path of a more general education with sharing among qualifications in the same field in the first years leading to a more specialised year later on would help students to reorient and, if necessary, change studies once underway, with a higher level of personal knowledge and maturity. The redesigning of the qualifications, when deemed suitable, can be done without significantly increasing the costs linked to the teaching and research staff.

Another aspect to be borne in mind is that the labour market increasingly requires interdisciplinary professionals. Thus, there is a need for this to be reflected in the syllabi. In general, the map of degree qualifications must respond to social needs and demands, without falling into mercantilisation and without forgetting the University's public function and its cultural education role in all branches of knowledge. It is useful to distinguish between the studies that are closest to a certain profession or a social or economic sector and the more generalist studies, and education related to a field of science or knowledge. Especially for the former, it is advisable to involve the social agents in participating in the diagnosis of the needs and in the assessment of the profiles of the education proposed for the new studies. Once the qualifications have been established, the information and transparency as to the development of the results of each of the studies programmed will be a basic requirement.

Project 16 > Undergraduate studies and prior education

Promote mutual recognition, facilitate mobility and acknowledge the education acquired in the framework of other, non-university teachings (Advanced Vocational Qualifications, CFGS) or of continuing education. Foment interdisciplinary offers coordinated between universities and certain industrial, economic and social sectors.

Project 17 > Graduate job placement

Promote actions and provide tools of support of the university system for the information and job placement of university graduates. Enable the coordination of the different placement and university-enterprise services of the universities.

Strategy 15 > Develop an articulated offer of master's degrees of reference in Europe and the world

Master's programmes represent a degree of more profound study and specialisation in university education and are directly associated with the capacities of expertise and R&D activity of the groups, departments and teaching and research staff. Access to the master's degrees must entail a selective filter of students. It is important for the master's degrees not to be understood as the old second cycles, and hence it is important to make the criteria that allow the general use of the denomination "master's" very clear.

When designing the map of master's qualifications, it must be borne in mind that not all Catalan students that finish an undergraduate course will go on to do a master's, in the same way that not all those who do so will study at the same university as they graduated in. The offer of master's studies, along these lines, must be increasingly defined in the framework of the EHEA and in the international sphere. This European and international aspect will, at the same time, represent a guarantee for quality education.

Each university must be able to choose, with objective criteria, the students of the master's programmes. The only requisite for being accepted on a master's will be a successful selection process, which under no circumstances should depend on whether the student has studied his or her degree at the same university. To this end, there is a need to encourage permeability between the different universities.

To date, a trend has been observed of "the more master's done, the better". There has not been a general policy or a common vision as to what was wanted to be achieved, or the means to make this possible. The result is that the series of qualifications does not clearly and perceivably express a common decision by the Catalan university system. Needless to say, in order to define a map of master's degrees of international reference, the same agility must be shown in programming as in de-programming them.

Strategy 24 > Fully develop the training of researchers and doctoral excellence programmes

(This strategy is dealt with in Ch. 4 on research.)

Strategy 16 > Strengthen university education that is based on knowledge and is more intensive in abilities, aptitudes and values

The changes in the model of education, described in the first section of this chapter, which are part of the general changes of the new knowledge society, raise new issues surrounding the relationship between graduate education and occupation. The first and main issue is the identification of the key competencies that the graduate must have, those that will guarantee personal development and professional success in the future. Once identified, we must see how to facilitate the acquisition of these competencies through the education system.

Education in content must be complemented by the acquisition of expertise, skills, attitudes and values, such as the capacity for study, the ability to relate, the ability to abstract, capacity of memory, oral and written expression and the capacity for argument. It is important to remember, however, that it is a question of complementing the contents and not replacing them. The key element in this process is the teaching and research staff and the teaching method the teaching and research staff uses in the process of education. Special attention must be given to the quality of university teaching, since the teaching and research staff must change, in part, their ways of teaching.

Education in order to live and work in an international context and, specifically, proficiency in foreign languages, is dealt with in greater depth in Chapter 6 on the internationalisation of the universities, as it deserves special mention. At a time of globalisation and European integration, knowledge of foreign languages attains prime importance. In our country, furthermore, we start from a trailing position in comparison with the European average. Along these lines, in the coming years we must ensure that once they have finished secondary school, Catalan students are sufficiently proficient (fluent in reading, speaking and writing) in a third language, principally English. The universities, in turn, must introduce measures so that such proficiency gains greater depth in the university studies by means of adapting the specialised language of each area of study with greater idiomatic proficiency.

Project 18 > Education in competencies

Foment specific plans and actions for education in competencies between the Generalitat, the social agents and the ACUP, with emphasis on teacher training.

Strategy 17 > Promote lifelong learning with a flexible, high-quality offer

The universities must be conscious that many students today already practise continuing or lifelong learning. They must therefore design a broad offer of education, aimed at individual desires and social, economic and cultural needs that coexist with initial education. The aim is that each segment of society should have access to lifelong learning.

Project 19 > Lifelong learning credit system

Promote a system of credits for the whole lifelong learning cycle and introduce mechanisms to acknowledge the education acquired which is not formally recognised.

Project 20 > University for the elderly

Coordinate and promote a programme for the continuing education of the elderly and help this collective to participate in university life and in the knowledge society.

Strategy 18 > Establish synergies between traditional attendance-based universities and the UOC in the framework of the *University of Catalonia*

The UOC is a key element in the Catalan university system and contributes its experience in distance teaching to the *University of Catalonia*. This experience is of great value since the philosophy of sharing resources and joining forces proposed by the *University of Catalonia* may often require virtual applications and solutions.

One aspect that ought to be studied is whether the face-to-face universities should participate with the UOC and have a voice and/or vote in some of its decision-making bodies, as well as knowing of and avoiding the inefficiencies that may arise from the development of virtual campuses by all of the universities in the system. In this way, we should consider both an office of recognition of studies and the suitability of creating joint qualifications between the UOC and the rest of the universities, aimed at students who are forced to abandon face-to-face education but wish to finish their studies via distance learning.

The current situation of the University in Catalonia requires knowledge to be disseminated towards new segments of demand, the fight against dropping out and lack of motivation, and it needs to take advantage of the diversity of methods at the service of the quality and efficiency of learning. By achieving these goals, the UOC may make a crucial contribution. In particular, there is a need to promote the deployment of joint qualifications that combine face-to-face and distance learning methods with the aim of stimulating teaching innovation,

attracting part-time students, optimising the available resources and taking advantage of the existing complementarities in the university system.

Strategy 19 > Foment a system of assessment and accreditation based on university autonomy

Some years ago, the Catalan universities incorporated concepts linked to the culture of quality into their strategic approaches and management models, to a great extent thanks to the joint work started in 1996 on the basis of the creation of the AQU in Catalonia as a consortium arrangement with the Government of the Generalitat and the universities. From the truly positive experience of these years, it becomes apparent that we must advance in the direction of simpler evaluation processes which, respecting university autonomy, promote accountability but, at the same time, avoid generating the feeling that assessment and quality processes are a means to their own end. Moreover, the ideal situation would be for each university to be able to monitor their quality model internally, and to plan and prioritise the actions that should take it closer to fulfilling international standards.

Quality must be the first element to be taken into account when designing the map of qualifications. Therefore, the processes and criteria involved in verification and later accreditation need to be known about and worked on jointly with the universities sufficiently in advance. Also, duplicities in assessment should be avoided, taking the competency of verification processes and accreditation to the closest administrations responsible for higher education. In the case of Catalonia, there is a need for effective coordination that generates value and avoids unnecessary duplicities between the AQU and the Spanish Agency for Quality Assessment and Accreditation (ANECA according to its Spanish acronym). Thus, it is essential to back decidedly *ex post* assessment systems that are based rather on results and impact analysis than *ex ante* assessments, which are widespread in Spain today, which are a source of bureaucratisation and generate little added value.

Project 21 > Joint instruments for internal quality and assessment
Promote tools, instruments and mechanisms of inter-university coordination that strengthen assessment and an improvement in quality at the universities.

Strategy 20 > Improve students' academic performance and recognise the studies carried out

The system of studies must be based on a branched hierarchical structure with exits at different levels to avoid the accumulation of students or their exit from the system with no recognition. The undergraduate (first year

passed), graduate, master's and doctorate hierarchical system presupposes that each of these levels should really become an exit point from the system, and not just from the point of view of transit along a compulsory linear route with sole entrance and exit points. The conditions of access to a higher level must be progressively more restrictive and have one principal criterion: the merits shown by the level of studies. In this way, students' performance and mobility between universities between undergraduate and postgraduate courses are stimulated.

Project 22 > Academic recognition and performance

Introduce mechanisms of recognition of the courses done. Generate a table of information as to academic performance of the different degree courses in order to make them known to society.

Project 23 > Secondary school-University dialogue

Organise, on an annual basis, workshops for study and reflection between secondary school education and the University that promote an integral system of education.

Strategy 39 > Guarantee fair access to higher education via a broad system of scholarships, aid and loans

(This strategy is dealt with in Ch. 7 on the University at the service of people.)

Strategy 21 > Promote educational university research and innovation

As is explained in the first section of this chapter, education is going through a time of profound changes. Students and teaching and research staff must adopt new ways of learning and teaching. The step from the model of lectures to active education which, in a simplified manner, involves the new EHEA, requires a change of mentality by the ones and the others. In this process, scientific and methodological elements must be available that contribute proposals for teaching innovation.

Project 24 > Institute of Teaching and Learning

Promote the creation of an Institute of Teaching and Learning in collaboration with the Generalitat and other agents, with a mission to give support to pedagogical research and innovation in teaching methods, provide recommendations and develop policies in this field, especially for the establishment of the EHEA and the new technological tools.

3.4

A University that is research-intensive and stands at the heart of the scientific, technological and cultural system

Europe and its citizens should realise that their way of life is under threat but also that the path to prosperity through research and innovation is open if large scale action is taken now by their leaders before it is too late.

EUROPEAN COMISSION (2006b)

Context and diagnosis

▸ Investment into R&D and scientific production by Catalan universities

Catalonia and its universities in particular have made a considerable effort to improve the level of R&D in the last twenty years. In little over two decades, Catalonia has gone from being a country with almost negligible scientific production that was highly concentrated in a few groups and individuals to enjoying an active presence in research activities, comparable to that of other countries on a European and international scale in a multitude of branches of science. With regard to financing, spending on R&D soared between 1987 and 2006, reaching 1.43% of the GDP for Catalonia, higher than the figure for Spain (1.2%, source: INE), but still far from the average for Europe (EU-25: 1.81% in 2004, source: OECD, 2006).

A large amount of the funding put into R&D in Catalonia comes from the university academic sector (0.32% in 2004). This participation by the universities of Catalonia represents 19.35% of the overall weight for Spain, higher than the Community of Madrid (15.87%, with a percentage funding in R&D of 0.30%), Andalusia (14.78%) and the region of Valencia (14.95%).

This investment has been possible thanks, among others, to the definition of instruments and public initiatives throughout Spain and Catalonia;

the National R&D Plans and the Research Plans of Catalonia (currently the Research and Innovation Plan – PRI) should be highlighted. Along these same lines is the desire to establish a Catalan Pact for Research and Innovation (PNRI) involving a broad-based consensus among all of the agents involved in Catalonia.

Framework programmes have also contributed to this funding. From very early on, the Catalan universities got access to European funds transforming research management units into specialised units. The results of the 6th Framework Programme were highly positive for the Catalan public university system. Thus, of the ten most competitive Spanish universities in returns from this programme, five were Catalan universities, coordinating 50% of the projects. Also, the evolution of the 7th Framework Programme (2007-2013) is positive insofar as the results for 2007, with a Spanish return of 6.5% (Knowledge and Development Foundation, 2007).

Equally positive has been the response by researchers to the call by the ERC as part of the call for projects known as "Starting Grants", which are of three to five years in length and are strongly funded, possibly reaching two million euros per project. Of the 9,000 applications submitted, 574 corresponded to requests from Spain. Of the 300 projects selected, twenty-four are Spanish and represent funding of approximately fifty million euros. Catalonia is the autonomous community to have most heavily participated in this call, obtaining thirteen funded projects, principally attached to research centres of excellence located in one of the science and technology parks or campuses of Catalonia. At the statewide level, the Higher Council for Scientific Research (CSIC) has been the most competitive public research body, with seven projects awarded.

With regard to production, the number of scientific publications by the Catalan R&D system is higher than the average for Europe. Hence, Catalonia participated in 0.57% of the publications in journals that constitute the databases of the Institute for Scientific Information (ISI). This high volume of scientific production contrasts with the number of citations as an indicator of the quality and impact of the publications. Thus, the analysis of citations highlights a drop in positions, falling below the European average. The 2004 report by the Statistical Office of the European Community (Eurostat) shows that the proportion of citations per article is 4.99 in Spain, 5.33 in Catalonia and 6.04 in the EU.

Despite these positive advances, however, Catalonia's position in research and innovation is lagging farther and farther behind the leading countries and regions, according to the results of the 2006 European Innovation Scoreboard. Its 82nd rank places Catalonia behind the Community of Madrid (31), the Basque Country (55) and the Community of Navarra (75). The data

from the 2007 European Innovation Scoreboard indicate that Spain is in the third of four groups of innovating countries, qualifying as "moderately innovative" together with Slovenia, Estonia, the Czech Republic, Italy and Norway (MERIT, 2006; UNU-MERIT, 2007).

Biomedicine and the role of clinical research: a paradigmatic case

In Catalonia, the fields of biomedicine and health sciences are of capital importance in the production of new knowledge. Biomedicine contributes 26.3% of scientific documents and clinical medicine contributes 25.8%. Analysis of clinical research indicates, moreover, that the Catalan university hospitals present a notable activity marking an important difference in respect of the weight of Catalonia in other sectors. So, in the 1996-2004 period, of the ten most productive Spanish hospitals for clinical research activities, five belong to the Catalan system. The fact that the top three are Catalan, for now, ought to be especially valued: Hospital Clínic i Provincial de Barcelona (UB), Hospital de la Vall d'Hebron (Barcelona, UAB) and Hospital de la Santa Creu i Sant Pau (Barcelona, UAB).

The staff of the Catalan universities

In 2005, the Catalan R&D system consisted of 37,862 professionals (22,240 equivalent to full time researchers) devoted to R&D activities, of whom 44.2% belonged to the universities and 39.1% to enterprise. Of the total, about 38% were women. These individuals form part of the scientific fabric of Catalonia, with a significant growth if we compare this to the 18,386 researchers of 2003.

Despite this growth, the number of researchers in comparison with the active population, in contrast with different European regions that are comparable with Catalonia, would indicate that Catalonia is considerably below (0.84% in 2003 and 0.89% in 2004), for example, Baden-Württemberg (1.51%), Bavaria (1.19%) or Berlin (1.46%) in Germany; and likewise lags behind regions like Lisbon in Portugal (1.2%) and Midi-Pyrénées (1.29% in 2001) or Rhône-Alpes (1.11% in 2001) in France.

One of the critical points of the Catalan system is its low number of technicians in general, and in the university system in particular. Apart from the low growth of this group, the system presents notable imbalances, due mainly to the lack of professional qualifications and prospects.

As regards attracting researchers and the generation of opportunities for researchers' professional careers, two important programmes have been quite positive indeed: the ICREA Programme in Catalonia and the

Ramón y Cajal Programme in the whole of Spain. Until 2006, in Catalonia the ICREA Programme had attracted 155 highly qualified scientists from different specialities. 48% of ICREA researchers have joined the Catalan universities, and 52% have gone to the research centres, most of which are linked to the universities (Source: ICREA).

Catalonia and its universities therefore have a reasonably consolidated system in the education of research personnel (doctoral programmes). It produces a large number of doctoral theses each year and has a broad offer of doctorates awarded with the quality distinction. It is a system which is principally devised to educate the doctors required by the public system in order to maintain its degree of competitiveness. Nevertheless, there is evidence of an ample shortfall regarding the social and entrepreneurial worth of doctors and researchers, which leads to the insufficient incorporation of these professionals into the institutional, social and entrepreneurial fabric.

▸ University research structures in Catalonia

University research in Catalonia is done fundamentally at the university department level through periodically assessed research groups. At the *University of Catalonia*, there are currently 673 consolidated research groups recognised by the Generalitat de Catalunya.

More recently, the policy on the creation of new research centres aiming at international excellence, encouraged by the Generalitat de Catalunya and the universities, has built a map of centres of certain significance and specific weight in different areas of science and knowledge. The principal characteristic of these centres is their funding, which is based on programme-contracts, and an autonomous system of management through legal formulas of foundations or consortia, which enable more autonomous, flexible management. The effective inclusion of university education and scientific research, and the necessary cooperation between universities, centres and the business environment to constitute a robust scientific, technological and cultural system on a European and international scale, will depend on the future governance of these centres.

Future outlook

The public universities wish to assume the social commitment of continuing, with even greater strength than ever, to lead the way towards becoming a leading country in scientific research, innovation and cultural progress. With regard to scientific, technological and cultural matters, there are six strategic areas in which efforts must be focused in the coming years, in actions agreed to and coordinated among the universities, the responsible administrations and the entrepreneurial, social and cultural fabric.

Research policies and structures

Research and innovation policies must be understood as vectors for the coordination of and thrust behind the different agents of the system under the leadership of the representative public institutions (parliaments and governments). In the development of public policies, there is a need to seek, at all times, harmonisation and the creation of value in the so-called "triple helix" (enterprise, universities and public institutions). Along this line, the governance of the scientific and cultural system must be understood from a participative perspective which is open to the different institutions, not just the representative public institutions. To do so, it is necessary to seek State agreements that place research, innovation and culture at the centre of political priorities and with long-term visions and financing, which are a long way from the immediate political concerns. The search for a PNRI in Catalonia, based on the Generalitat Government's leadership, coupled with the recent constitution of a Ministry of Science and Innovation in the Central Government, are positive advances in this direction. Following this perspective, in the coming years, there is a need to stimulate governmental and technical support structures that are highly qualified for the design, implementation and assessment of public policies and their different instruments.

The research structures and their effective interrelation and coordination are another key aspect. Working towards the maximum coordination and interrelation among universities research centres, and of all of these with the institutions and the various sectors of enterprise, it is possible and represents an imperious need if we wish to consolidate a sturdy country in science, technology and cultural production. Along these lines, the *University of Catalonia* and the science parks of the universities represent excellent opportunities for consolidating areas for the coordination and creation of value, under the leadership and with the support of the public institutions.

Promotion of research staff and research groups

Without a doubt, the teaching and research staff and researchers in general constitute the most decisive factor in the development of the country's scientific, technological and cultural abilities. This is why there is a need to generate policies that help the academic and research career, both in the universities and institutions and, above all, in the social and entrepreneurial milieus. Socially recognising research personnel, reaching the European average in number of researchers per inhabitant, facilitating far more mobility of personnel between the universities, research centres and enterprise, placing doctors and researchers in enterprise and institutions, attracting and retaining talent – both from our own country and from abroad – and ensuring a worthy professional career with conditions on a par with the leading countries in the EU are inalienable goals over the coming years.

Along these lines, there will be a need to prioritise work at the universities on consolidating of the postdoctoral stage even further, assuming and fully developing the European Charter for Researchers, and extending the teaching and research staff commitment agreement (with distinct degrees of intensity and profiles adaptable over time, as is established in Ch. 8 on personnel policies).

Over the last ten years, an average of a thousand doctors have graduated each year from the Catalan universities. This number of new medical graduates is quite decent and comparable with the countries of Europe. In Catalonia, however, only 35% of researchers are in enterprise, and only 20% of these are doctors. These figures are extremely low when compared with the equivalent figures for the United States (80% of researchers are in enterprise) and Europe (50%).

Thus, there is a need always to continue to strengthen the universities' research groups, providing them with instruments and medium-term fundamental financial security. The heart of the research skills in Catalonia lies in the universities' research groups, and for this reason there is a need to encourage new tools to strengthen them and enable them to compete with greater guarantees on the European and international stage in the framework of global academic activity (teaching, research and third mission).

Resources for research

There is a need for growing, selective investment in research by governments and enterprise in accordance with the reality and the priorities established in the EU. We need to reach 2% overall investment in R&D in Catalonia in 2010 and concretise a financial framework that will enable reaching the 3% in 2015, as established in the Barcelona Declaration. In the area of the university, as is established in greater detail in Chapter 11 on university

funding, we must act as follows: include indirect costs of research activity in ordinary university funding, engage a plan of research infrastructures that preferably deals with research infrastructures, university technology platforms and science parks over a ten-year period, and direct research funding on the basis of projects and goals of excellence in parallel with the academic priorities and strengths (postgraduate, doctorate, third mission), with a perspective of complementarity at the heart of the *University of Catalonia* and strengthen the unique institutional profiles.

▸ Strategic alliances and international cooperation

Internationalisation and the quality of research are complementary aspects. In this way, helping the international cooperation of Catalan research involves advocating its greater quality and impact. As described in Chapter 6 on the internationalisation of the universities, opening them up to the world involves establishing joint strategies, prioritising projects, fields and geographical areas. In general, it involves strengthening the international management capabilities of the university and scientific system (capabilities of information, influence on European and supranational bodies, capabilities of management by means of highly qualified professionals, and joint platforms for the mobility, reception and the attraction and retention of talent). These strategies ought to enable a greater international presence and facilitate participation in large scientific, technological and cultural projects and infrastructures. Cases like the ERC, the European Institute of Technology (EIT) or the large European scientific facilities are examples of this.

▸ Integral system management

One of the most evident shortcomings of the Catalan and Spanish research and innovation systems, which clearly sets Catalonia and Spain apart from the leading countries of Europe, is the lack of sufficient technical capabilities and of their professional management. With regard to this, as mentioned in the diagnosis, we can add the lack of development of qualified technical staff to support research. Improving the ratio between the technical support staff and the teaching and research staff is an imperious necessity.

In the public institutional environment, this necessarily involves the creation of professionalised agencies that are independent from political power, and the boosting of smaller yet high-expertise bodies to advise on, design and evaluate public policies on research development and innovation in Catalonia (Parliament of Catalonia and the Government of the Generalitat). In the university context, there is a need to professionalise the management of research, encourage new professional profiles in research

management, and generate joint management capabilities like the *University of Catalonia*, which will lead to greater efficacy, efficiency and economy.

▸ Science-society dialogue and evaluation of research and culture

In a country lacking a historical tradition in scientific research, bringing scientific research and culture in general closer to the people is a critical factor. It is not just a question of continuing to promote actions communicating and disseminating science and culture, but also of encouraging dialogue between science and society at all levels, including an ethical debate on the conditioning factors and limits of scientific activity. Especially, there is a need to attend to children and young people with a specific plan, to bring home to them the importance of research and culture in their lives and for the collective welfare and progress, and to encourage scientific and technological vocations among young people. At the same time, we must promote an integral plan among young people to acquire the skills and attitudes for entrepreneurship or the risk of creating and managing complex projects in an increasingly international perspective regarding personal and working life.

Strategies and projects

Strategy 22 > Confirm the commitment by the universities to excellence research in Catalonia

As mentioned earlier, the public universities of Catalonia wish to assume the social commitment of continuing to lead with greater strength than ever the way towards becoming a leading country in scientific research, innovation and cultural progress. The universities, as recognised by European institutions, are the key institutions in the effort towards building a society based on knowledge and cultural progress.

To advance along this line, it is considered necessary to seek all paths to achieve maximum coordination between agents in the research and innovation system. Especially, in the coming years there will be a need to achieve an optimal, fruitful fit between the universities, the Research Centres of Catalonia (CERCA) and the CSIC, as well as promoting common infrastructures and platforms (science parks, facilities such as Sincrotró ALBA or the Barcelona Supercomputing Centre). Coordination must facilitate economies of scale, specialisation and complementarity between

institutions, multidisciplinarity to attend adequately to the new social and scientific requirements, and the ability to participate in and encourage large projects of national and international scope.

In addition, there is a need to promote the full integration of the universities in regional and urban projects in which knowledge and research are fundamental elements and, as has been said, promote sectorially the network activity of the different scientific poles so as to take greater advantage of the resources. Along these lines, formal and informal relations between enterprises, universities, technology centres, investors, promoters and social agents must be bolstered in the different projects and initiatives.

There is a need to foment the consolidation of research and creativity clusters or poles based on structural collaborations between different universities and institutions allowing the creation of synergies and added value in innovation, research and university education.

The public universities must be provided with their own unique, coordinated and complementary research policies in the framework of the *University of Catalonia* and with regard to other institutions of their environment which justify their existence and are useful for attracting the best researchers and the private sector. This requires specialisation, concentration on the established lines and a demand for quality based on international standards and on the framework of the ERA.

Strategy 23 > Boost the academic career and the personnel devoted to research and innovation

In the coming years, there will be a need to consolidate the policies that advocate a professional career for the teaching and research staff of universities and for researchers in general. The lines of work should focus on the following aspects:

> Promoting the personalised academic assignment in all universities.
> Updating the retributive structure, especially bonuses for scientific productivity.
> Establishing the rights and duties of teaching and research staff and researchers, along the lines of what is established in the European Charter for Researchers and the Code of Conduct for Contracting Researchers.
> Seeking a suitable model of labour relations and collective bargaining in the framework of the Basic Statute of the Public Employee (EBEP).
> Clarifying the attachment of the teaching and research staff and the research support staff at research centres or in other networked research structures.

> Promoting a model of mobility within the system of universities and with the centres which is conducive to teaching and research efficacy.
> Aiding the mobility of the teaching and research staff and researchers between the universities and enterprise.
> Promoting measures of support for young postdoctoral researchers, easing their international mobility based on criteria of quality and universality and creating a framework for inter-university mobility in Catalonia and with other countries and regions.
> Promoting scientific careers in enterprise and socially recognising the doctors and researchers in order to increase the number of researchers and doctors in enterprise (see project 31).
> Significantly increasing the size of technical research support staff, promoting their qualification and career opportunities.

Strategy 24 > Fully develop the training of researchers and doctoral excellence programmes

Advancing in the initial training of the teaching and research staff is a critical factor for the consolidation of research in Catalonia. To this end, doctoral programmes gain special importance.

The experience of the last twenty years in the organisation of doctoral programmes would indicate that the autonomy granted to the universities has been positive in order to evolve from a fragmented, almost non-existent system to a more structured model into which criteria, indicators and processes aimed at continuous improvement and quality assurance have progressively been incorporated. The results are validated, and the volume of doctoral programmes in the Catalan universities that have been awarded the quality distinction is proof of this.

Therefore, there is a need to continue to confide in the principle of institutional autonomy for the organisation of the doctorate. It is to this end that there will be a need for effective collaboration with the research centres so as to incorporate their researchers to the tasks of teaching and educating young researchers.

An agreement must be promoted between the Catalan public universities in order jointly to define the start of the academic career in the framework of doctoral education; assuring postdoctoral mobility with an aim to achieving greater benefit from opportunities offering research careers and clear professional prospects, but also assuring later professional returns and progress, whether academic or not, which might avoid the present intellectual decapitalisation of society.

In fact, in chapters 1 and 3 on the *University of Catalonia* and university education, there is mention of the need to foster greater coordination

between public universities and the core of the *University of Catalonia* on master's and doctoral programme matters. One specific measure is the creation of an Postgraduate Inter-University Platform (see project 5).

Project 25 > Tutoring of doctoral students
Foster actions to lead to the closer tutoring of students while the research project is being done and a closer link between the students and the universities. Foment the recognition of the task of the tutoring of doctoral students, as academic recognition in the professional promotion of the teaching and research staff.

Strategy 25 > Attract and retain talent and foment strategic alliances with groups, universities and countries of reference

In recent years, Catalonia, under the leadership of the Generalitat, has known how to develop very positive strategies for reincorporating top-level researchers and attracting talent from other universities, centres and countries. Special mention should be made of the ICREA Programme and the creation of research centres of excellence with the participation of universities. In the next years, this policy must be consolidated, accentuating the measures to retain researchers (especially linked to strategy 23).

In fact, the proposal is to foment strategic alliances with groups, universities and countries of reference, understanding that the research produced in Catalonia needs sturdier, permanent collaboration with leading universities and regions in science, technology and cultural activity.

Project 26 > Boost the ICREA Programme
Support the ICREA Programme, with an aim to ensure its financial viability for the annual contracting of top-level researchers. Also, ensure the facilities and working conditions of the researchers within departments, groups and centres.

Project 27 > Headquarters and antenna of the EIT
Promote the establishment in Catalonia of the headquarters and of a node of the EIT network.

Strategy 26 > Improve institutional research management capabilities

One of the goals of the promotion of the *University of Catalonia* is, without a doubt, the creation of a coordinated model of institutional management of research and third mission, among others (see Chapter 5 on the third

mission at universities). It is to this end that, in a coordinated fashion, an improvement in the mechanisms to assess research, the simplification of *ex ante* assessments and the improvement of mechanisms to assess impact are promoted. At the same time, there is a need to improve the systems of information and the homogeneous collection of information and indicators of efficacy and efficiency in scientific activity.

The idea is to promote new areas of inter-university research management based on a transversal organisation. The Catalan public universities must go into greater depth on the creation of veritable units that manage and give support to research. They must not be mere administrative units; on the contrary, they must work actively to optimise the research that is done and therefore facilitate the achievement of the goals proposed, as well as being able to participate in national and international projects of great scope and technical and managerial complexity. There is a need to advance towards the improvement of the technical capabilities to manage research at all levels, with a system for professional development and quality education.

As regards the general system of governance of research in Catalonia, a model of maximum professionalisation of the functions of advising, designing, implementing and assessing public policies and instruments with autonomy in respect of political power is advocated.

Project 28 > Agencialisation and professionalisation of research management

Advance towards a system of research management which is professionalised to the maximum and enjoys autonomy as regards political power, facilitating instruments and training highly qualified personnel to perform this function. Specifically, seek a political agreement for the consolidation of a system of public agencies to manage research and innovation.

Project 29 > Coordinated research management and information system

Create a model of coordinated management of research and knowledge transfer that includes functions such as project management, the evaluation of research and the promotion of entrepreneurial projects. Specifically, set up a project of a research information system that is shared among universities, centres and the Generalitat.

Strategy 58 > Fully include the indirect costs of R&D&I activities in university funding

(This strategy is dealt with in Chapter 11 on university funding.)

Strategy 27 > Put science and culture at the centre of social and collective priorities, and foment permanent dialogue between science and society

Society must know about and become aware of the importance of science, technology and culture for individual and collective progress and welfare. Be aware that the universities are developing research programmes with the aim of improving the quality of life and the relations of society itself. To this end, there is a need to foment the science-society dialogue in order to achieve an educated, informed citizenship and convey science to all levels of education and all ages.

The science-society relationship requires sturdy units of intermediation that are integrated in the academic community and which, at the same time, are flexible enough to respond to present requirements.

Project 30 > Master plan of scientific communication and dissemination
Promotion of a Master plan of scientific communication and dissemination in Catalonia, based on collaboration between the different institutions and bodies (Generalitat de Catalunya, universities, research centres, the media, the business sector and social bodies).

3.5

A University that acts as a motor for development, innovation and welfare

La Universidad enseña a ser médico, farmacéutico, abogado, juez, notario, economista, administrador público, profesor de ciencias y de letras en la segunda enseñanza, etc. Además, en la Universidad se cultiva la ciencia misma, se investiga y se enseña a ello. En España esta función creadora de ciencia y promotora de científicos está aún reducida al mínimum.[8]

José Ortega y Gasset (1930)

Context and diagnosis

Nowadays, no one doubts the (direct and indirect) impact of university institutions in the development and competitiveness of regions and countries. In an increasingly knowledge-intensive society and economy, the universities and the agents of the research and innovation system are vital institutions. Producing knowledge, educating qualified professionals, educating cultivated citizens who are trained to analyse critically, collaborating directly in projects and processes of territorial development, working with the public authorities to analyse social problems and developing public policies are some of the tasks undertaken by the universities. The set of activities that have a direct, relatively immediate impact on society is usually known as "the third university mission" (beyond what would be the classic mission of educating in the different fields of knowledge and the function of scientific research). Examples can be quoted in a multitude of fields in which the relationship between the University and society and the territory is specified, such as health and education policies, social services and social policies, the environment and the energy policy, regional planning, cultural production and management, the development of public infrastructures or economic development itself and entrepreneurial competitiveness.

The globalisation of higher education has, moreover, contributed other visions of the current University based on new social contexts and new collective problems. Problems of the north-south balance, the consequences of mass migration, climate change and energy requirements are all eminent aspects in today's society. The liberalisation of higher education, access to the University by less privileged social strata and the increasing need for scientific excellence in a global context are some of the new focal points.

It is to this end that the most advanced European universities have developed a paradigm of the third mission based on two general goals: first, the institutional social responsibility of the University; and second, the commitment to transform knowledge into an economic value, affecting the growth of competitiveness and facilitating innovation, creativity and cultural, scientific and technological development. The only way to establish social balance is by increasing regional wealth and distributing the resources fairly and equitably.

The third mission is structured, more precisely, into eight sub-functions that can all, or the sum of a few, be found, to a greater or lesser degree of intensity, at each of the Catalan public universities (Schoen [*et al.*] cited in Laredo, 2007). The sub-functions are as follows:

> *Human capital and job placement of graduates and doctors*. Incorporating graduates and doctors to the social, economic and labour fabric.
> *Intellectual property*. Transfer of knowledge and technology that has been previously protected by the management of industrial property.
> *New business projects and the fostering of entrepreneurship*. Fomenting the business fabric based on the creation of spin-off companies based on the results of the research of academic groups.
> *Contracts and technical consultancy in enterprise*. Contracts with enterprise and industries in areas of technological research and development.
> *Contracts and consultancy in public institutions*. Agreements, conventions and contracts with non-profit-making public institutions or bodies on matters of public interest.
> *Design, development and assessment of public policies*. Participation and technical consultancy of the personnel of the University on the analysis of social problems and in the design, implementation and assessment of public policies of the different governmental levels.
> *Fostering of cultural and social life*. Participation in activities or projects of a cultural and social nature, contributing the expertise and abilities of the universities and university research groups.

> *Scientific communication and dissemination*. Fostering the public understanding of science. Interaction with society and scientific and cultural communication and dissemination.

In order to define this complexity of functions, the term *multiversity* has also been introduced, which has become fashionable again due to the growing globalisation of knowledge (Kerr, 2001; Krücken [*et al.*], 2007).

This has not always been the case since the European University principally has developed two activities throughout its history: education, which constitutes its basic function, and research, with the aim of generating new knowledge. Only as of 1960 was a new function introduced in the most innovative European universities, based on the relationship between the University and industry, which would come to be known as "technology transfer". The renowned Cambridge University, for example, began its transfer activity in the 1960s. During the 1990s the socially and economically most advanced European countries progressively defined a new role for the universities, which, as has already been said, came to be known as "the third mission", in a process that was especially promoted by the states with a view to improving the degree of social and economic sustainability of the regions. In the United States, university technology transfer was boosted by means of the Bayh-Dole Law of 1980, obtaining great results in the field of biotechnology. Also worthy of mention here is California's Silicon Valley as a paradigm of the close relationship between enterprise, the region and the universities of Berkeley and Stanford principally, producing a great number of ideas and technological developments.

In Spain, with the passing of the LRU in 1983 and, three years later, with the Law for the Promotion and General Coordination of Scientific and Technical Research, better known as the "Science Law", the incorporation of a new, still very weak function could be sensed, which determined the role of the collaboration between the teaching and research staff and the private sector. Article 11 of the LRU defined university activities around the new units, offices or Centres of Technology Transfer (CTT). In this way, during the second half of the 20th century, quite timidly at first, the third mission of the universities in Catalonia and in Spain was born.

Most Catalan universities became research universities as a result of the finance model, the organisation of the Spanish R&D Plans and the Research Plans of Catalonia, and due to the need firstly to improve the number of international-level publications, and then to focus on quality, based on achieving a better level of impact. The promotion of the teaching and research staff and incentive policies have had a great effect on this aspect and had not been changed until recently, with new goals being incorporated, though gradually.

At the end of the 20th century, other models of University also appeared that were more concerned with less academic aspects, in the classic sense of the term, dealing with broadening aspects of knowledge transfer to enterprise and other institutions, with the aim of bringing about improved economic and entrepreneurial competitiveness. These models are known by the terms "Entrepreneurial University" (Clark, 1998) and "University agent of the triple helix" – administration, academia and enterprise – (Etzkowitz, Leydesdorff, 1997). Emphasis should be placed on the innovating role of the Catalan universities in developing the new concept of technology transfer function, which groups the sub-functions of the third mission relating to economic progress and improved entrepreneurial competitiveness. It was already a fact, at the end of the 1990s and especially at the change of the millennium, that there was a need for a development of the transfer function concept to broaden it, for the first time in Catalonia, to functions of technological innovation and entrepreneurship in the setting of the creation of new technology-based companies (spin-offs) born from the result of university research and entrepreneurial initiative.

The Catalan universities have developed a series of experiences related with their function of knowledge transformation that generate economic value by means of support for existing enterprise or the creation of new business fabrics. In the first case, transfer is done thanks to transfer units, centres or offices that handle the industrial property rights of the results of university research and negotiate the licencing to third parties of the patent portfolio. It should be remembered that Catalonia boasts the first CTT and the first Patent Centre of academic origin in the whole of Spain.

University Offices for the Transfer of Research Results (OTRI) have developed an effective procedure for the creation and accompaniment of new technology-based enterprises arising from the results of university research. Entrepreneurial activities are carried out by means of a network of technological "trampolines", started and coordinated by the Centre for Innovation and Business Development (CIDEM, which pertains to the Generalitat). The coordination of university experiences on a national level is done via the RedOTRI network, formed by some sixty universities and nine associated bodies, which are coordinated through the CRUE's Sectorial Committee of R&D&I. All of the Catalan public universities are part of it and have always been innovative and promotional members. The last report (2006), published in the context of the 10th anniversary of the RedOTRI network, highlights the strong growth in the transfer function both qualitatively and quantitatively, with more than 550 million euros mobilised. Despite this, so far there is no reference to the participation of the universities according to autonomous communities, which makes analysis difficult.

With the aim of situating these new spin-off companies in academic environments during the first three years of life and increasing their viability, so-called Technology Incubators and other areas within the science and technology parks themselves have been promoted.

The Catalan universities have been developing innovative spaces for relations between enterprise and knowledge, with the accompaniment of top-level technology platforms. These spaces house research and technological development units of consolidated companies, small and medium sized enterprises (SMEs), spin-off companies, research institutes and groups, technology platforms and centres, among other innovative players. These spaces, called "science and technology parks", are today coordinated by the Catalan Science and Technology Parks Network, and are taking on an important role in the research and innovation system thanks to the initiative of the universities and the public authorities.

The innovative character of Catalan universities in the area of the third mission is apparent, moreover, in the initiatives of the creation of capital funds for the first stages of spin-off companies, such as the UPC's Innova-31 fund.

TABLE 8

Creation of spin-off companies of the IT Network 2001-2004.

	2001	*2002*	*2003*	*2004*	*Total*	*Var. 2001-2004*
Spin-off companies created	7	10	3	9	**29**	**28.6%**
Spin-off companies accumulated	12	22	25	34	**34**	**183.3%**

SOURCE > CIDEM.

TABLE 9

Number of technology-based companies created between 2001 and 2004 in the Network of Technology Trampolines.

	2001	*2002*	*2003*	*2004*	*Total*	*Var. 2001-2004*
Technology-based companies	7	0	19	31	**57**	**342.9%**

SOURCE > CIDEM.

Recently, the universities have increased the dedication of research groups to tasks that take advantage of the basic results of their research based on a method of concept tests to seek suitabilities in the market. This method is accompanied by the promotion of new, potentially useful projects for the market, following evaluation and development on the basis of processes

of risk finance. So far, there is little capital devoted to the funds for the evaluation of the results of public research, although it is hoped this will increase in the wake of other European universities.

As has already been mentioned, the third mission of the universities is not limited to the transfer of knowledge to create economic value; rather, its concept, known as "institutional social responsibility", is now broader. This responsibility presents each university with different profiles, which can be grouped into local, regional or global policies. The urban universities have an essential role to play in coordinated fashion with the local bodies in the districts in which they are located, helping with the construction of knowledge dissemination projects. The universities located in the metropolitan perimeter or the regional universities also act as fundamental agents in social cohesion and regional cooperation activities. These activities are complemented with cooperation activities for development on a global level, with a participation of research projects in education or accompaniment projects.

The relationship between the Catalan universities and the set of public bodies of the global sphere, whether established directly by means of foundations or indirectly by means of the Boards of Trustees, is a complementary way of understanding the third mission.

Increasingly, the universities, within the framework of this social responsibility linked to the third mission, participate in cooperation activities involving regional agents in order to catalyse clusters, spaces of sectorial innovation or poles of competitiveness. The most noteworthy among the operations in which the public universities are currently involved are, on the metropolitan level, the 22@ district, the b_TEC campus and the B-30 road; and on a Catalan level, the chemical cluster of Tarragona and the BioRegion of Catalonia (BioCat) project.

Future outlook

In this context and under the premises established by the EU, the *University of Catalonia* aims to be a true motor of development, innovation and welfare. In general terms, today, the Catalan universities are prepared to participate as primary knowledge-generating agents in the creation and consolidation of society and the knowledge economy.

Some countries and university systems have recently evaluated the real degree of impact of university activity on society and the economy (for example, California, Ireland, England, Scotland and the Scandinavian

countries). Also in Catalonia, there is a proposal to measure the direct and indirect contribution of the activities of the third mission to Catalan society.

The university's third mission in Catalonia must be constructed under a model of articulation, complementarity and global coherence of the university system and of the research and innovation agents. The Catalan university system as a whole is seen as a rich framework in response to this social requirement, and some important strengths are observed in some universities. The *University of Catalonia* as a joint, balanced system aspires to include and strengthen all of the functions that pertain to the third mission. Hence, it is not a question of the eight universities attending in equal intensity to the eight sub-functions of the third mission or technology transfer, but of the different institutional projects allowing the construction of a coordinated, balanced system for a university's third mission in Catalonia, at the service of the social, cultural and economic needs and demands.

The Government of the Generalitat recently included the search for a PNRI in its political agenda. The universities participate in this pact as productive agents of knowledge through research. The fragmentation and the high number of players involved in the two fundamental functions of this Pact, research and innovation, mar the true role of the universities as one of the three key agents of the system of science, technology and enterprise. Thus, there is a need to recognise and promote the leading role of the universities through a prominent role in the National Pact and through policies and public resources earmarked for the university's third mission.

To date, the public universities have also participated actively in the processes of strategic planning of the region and for competitiveness and social improvement. We find examples such as the Barcelona Strategic Plan, the Metropolitan Barcelona Strategic Plan, and the Agreement for the Competitiveness of the Catalan Economy promoted by the Generalitat of Catalonia with the economic and social agents and the Socio-Economic Board of the Area of Tarragona.

It must be stated categorically that the greatest impact of the universities in the region and on society is through the education of the individuals and professionals who attend the universities. Their incorporation into the business, institutional and social fabric is, by far, the determining factor for the construction of a more cultivated, more critical society that is better prepared to attend to the needs of enterprise, the institutions, and society in general to build a richer, more diverse culture, with citizens and professionals capable of applying the knowledge and skills acquired in any field of collective application or initiative. This reaffirms the need to increase permanent cooperation between the universities and the labour market, with initiatives such as observatories, bilateral actions, lifelong

education and professional recycling, or the direct support of Catalonia's SMEs.

Beyond the universities' participation in improving competitiveness and furthering economic and technical progress, the third mission also encompasses areas of social institutional responsibility, such as social policies and policies on individual and collective welfare, cooperation for development and consolidation of the welfare state. It is on this point that the Catalan universities join the dissemination of knowledge in different ways according to their specialities and their regional location. University, city and region are today inseparable elements of the institutional strategy itself. In chapters 2, on the University committed to society, and 7, on the University at the service of people, specific strategies and projects are developed in this aspect of society, culture, personal progress and social equity.

For the university's third mission to have a greater impact, a more fluent, constant dialogue is needed between the university institutions and society in general. Along these lines, it is essential to promote projects that facilitate this dialogue. Joint platforms with enterprise and the institutions (beyond short-reach strategies), greater mobility between the personnel of the institutions, enterprise and the universities, the evaluation of researchers and doctors in the working world, the fostering of entrepreneurship in society and among young people (university students); all of these are fields in which action must be taken to really construct the knowledge society in Catalonia. Here, the setting of specific collaboration offered by the science and technology parks is a clear opportunity.

It is necessary to overcome the common view of so-called applied research or technology transfer as being unidirectional, linear processes between the universities and the economic and social spheres. According to the theorists of innovation, we must create environments for fruitful collaboration between enterprise, institutions and universities with the wise combination of university (primarily postgraduate) education, basic research, excellence research (academic discipline) and collaborative research. According to Jacob and Hellström, "The key principle of future university management will be to avoid top-down steering and to develop techniques of management that are guided by a philosophy of creating an environment in which the production of knowledge can be conducted. [...] The university manager will have to develop a model that will harmonize three very disparate activities and interest groups. These are education, networked research and core disciplinary research. The future high performing universities will be those in which management succeeds in creating a context where these three interests can develop and draw sustenance from each other" (Jacob, Hellström, 2000).

Strategies and projects

Strategy 28 > Promote the transfer and dissemination of knowledge through the incorporation of graduates and doctors to the social, economic and employment fabric

As has been said previously, one of the ways towards improving economic competitiveness and generating value and innovation in Catalonia involves the incorporation of graduates, doctors and technologists to the entrepreneurial, institutional and social fabric. This is why there is a need for joint action by the universities and the administrations in order to facilitate the education and the capabilities of the graduates and the doctors so as to help their integration into enterprise and institutions. Specifically with regard to the doctorate, an effort needs to be made to regulate the duration of the doctorate targeting the external sector in order to facilitate doctors' integration thereto.

Along these lines, the idea is to begin actions to improve the connection between vocational training and the University through continuing education and the introduction of bridges to facilitate, on the one hand, the improved education of this collective and, on the other, strengthen their necessary role for the Catalan economy. There is a need to facilitate the proximity and coordination between the responsible units of the public universities and the vocational training centres in order to establish a tutorial at each centre sectorially. To this end, the universities that are directly linked with the nearby region have a determining role.

Project 31 > Professional development and valuation programme of doctors in the entrepreneurial, institutional and social fabric

Engage a wide reaching programme for the evaluation of the doctors and researchers in the entrepreneurial, institutional and social fabric. Foment their professional placement in enterprise and facilitate tools and instruments for their development and professional training.

Strategy 29 > Develop a model of public university based on the third mission that provides a balance between social development and economic strengthening

The public universities wish to establish a globally balanced model of the third mission, which turns goals of knowledge transformation into social improvements on the basis of the characteristics and strengths of each institution, on a local, regional or national level and promotes international cooperation actions. Moreover, participating in the construction of a

knowledge-based, scientifically robust Catalonia with a capacity to generate economic value and entrepreneurial growth through the policies of knowledge transfer, evaluation and commercialisation is defined as a fundamental mission. These actions will be framed in the code of ethics of the *University of Catalonia* (see project 9).

The proposal is to work on a sustainable model of institutional social responsibility. There is a commitment to the development of a modern third mission which includes an important economic aspect but does not overlook the social aspects. The exercising of institutional social responsibility must be done on the basis of the participation of each individual university in the social and cultural life that surrounds it and of interaction with the civil society (cultural and civic bodies, museums and performing centres, libraries and cultural spaces, neighbourhood associations, specialist fairs and events). In this area, the goal is to achieve a balance of the third mission in a global environment and at the same time maintain the individuality-identity of each university.

Project 32 > International trade portal
Creation of an international trade portal of projects, results of research and patents.

Project 33 > *University of Catalonia* entrepreneurship programme
Start up joint initiatives to foster the entrepreneurial spirit and the creation of business projects and spin-offs in collaboration with the public institutions.

Strategy 30 > Foment and value the third mission among the teaching and research staff

In order to drive the third mission into the core of the universities, it is essential for the governments and public administrations to create suitable incentives and provide specific resources expressly destined for this purpose. In the area of the teaching and research staff, just as an incentive is given for excellence in teaching and research, the same must be done with participation in the activities linked to the third mission. There is a need to motivate participation by the teaching and research staff in the creation and development of spin-off companies, cooperation projects, social initiatives, etc. There are many tools to achieve this: teaching credits, prizes, sabbatical years and, above all, the recognition and evaluation in the assessment criteria of the activity with retributive complements and specific funding for university projects of the third mission, projects that will have to be evaluated in order to analyse their real impact on society, culture and the economy.

Project 34 > Assessment and incentives for the third mission among teaching and research staff

Create mechanisms for the assessment of the activities of the teaching and research staff and get underway a policy of incentives in this field (selective funding of projects and the evaluation of their impact) through a coordinated policy by the Central Government, the Generalitat and the *University of Catalonia*.

Strategy 31 > Promote a policy on innovation based on science and technology parks

Catalonia has been a pioneer in Spain in the development of science and technology parks. In order to consolidate them in the research and innovation system and for them to contribute the maximum added value in inter-university cooperation, research centres, platforms and technological services and enterprise, an ambitious, long-term government policy is essential, which allows the planning over ten years of the structure of the parks in Catalonia, and which always promotes their distinction and complementarity. In this regard, it is considered necessary to establish the sectorial coordination of the parks attached to the public universities of Catalonia and sign agreements lasting several years for their consolidation with the Administration of the Generalitat and with the regional institutions (borough, provincial council, county council).

Moreover, there is a need to render effective the commitment acquired by the Administration of the Generalitat to fund the science parks linked to the Catalan universities via the return of the loans granted in recent years by the Central Government.

Strategy 32 > Incorporate the function of the third mission by targets in university funding

In the framework of the development of a new model of funding of Catalonia's public universities, there is a proposal to introduce elements of the promotion of the third mission and establish its overall goals for the system. In this regard, the third mission must be understood as described here: firstly, in the dual aspects of institutional social responsibility (society, culture, welfare and public policies) and economic and regional competitiveness; secondly, dealing with the singularity and the profile of each university and each region; and thirdly, with a coordinated action generating complementarity in the framework of the *University of Catalonia*.

Project 35 > Programme-contract of the third university mission

Draft a quadrennial programme-contract between the Generalitat and the

University of Catalonia which includes the common projects of the university system and the projects and goals of each of the universities, with specific funding and attending to their real impact in the aspects of economic competitiveness and institutional social responsibility.

3.6

A University fully European with a global vocation

In global knowledge economies, higher education institutions are more important than ever as mediums for a wide range of cross-border relationships and continuous global flows of people, information, knowledge, technologies, products and financial capital.

SIMON MARGINSON AND MARJIK VAN DER WENDE (2007)

Context and diagnosis

The phenomenon of globalisation, which has a growing impact every day on society and on the economy, also directly affects the universities. In fact, the University and scientific activity have developed historically and by their own idiosyncrasy in a global context, beyond the political frontiers and national realities. The desire for universality and the search for answers by means of scientific activity have led higher education and research institutions to work in open, global contexts.

Policies on international relations and the degree of internationality of the universities therefore more than ever have become key aspects for due consideration and development by the university institutions themselves and by the university systems and the governments involved.

In this context, throughout the second half of the 20th century and until today, the European universities have lost much of the academic, scientific and social leadership they had amassed. As is well known, a clear decantation has taken place of university, scientific and technological leadership towards the United States and, more recently, towards emerging countries in Asia which are gaining scientific and technological significance. One need only look at several factors that corroborate this: the international university league tables (see Chapter 1 on the *University of Catalonia*), the brain drain, the continuous

drip of pre-doctoral students and post-doctoral researchers to the United States, or the notable presence of American universities and centres in several branches of science, culture and technology, only occasionally accompanied by some European centres and universities. If we add to these circumstances the so-called "European paradox" (that is to say, scientific research that has not been sufficiently translated into the generation of innovation and technological development and of new entrepreneurial products and projects) and the relative social importance and consideration of the universities and university students (once again, unlike the north American model, where the University is the nerve centre of social and political life), certainly, the diagnosis is that there is an urgent need for improvement.

It is in this landscape that in the last thirty years initiatives and programmes have been arising from the European political institutions in an attempt to attenuate or overcome these shortcomings and, wherever possible, catch up with the United States, Japan and the emerging economies of Southeast Asia. The Framework Programmes, the large European scientific infrastructures, the promotion of student mobility and science studies (for example, the Erasmus and Marie Curie programmes) were born out of these conditions and with this purpose, as well as that of building a truly European citizenship, crossing the frontiers of the nation-states. More recently, as is well known, the progressive development of the idea of an EHEA and an ERA, which we have dealt with in previous chapters, is also a response to this aim to strengthen a more dynamic, more competitive, more attractive European university area for all (students, lecturers, researchers). Recent projects such as the new ERC or the still incipient EIT are two more examples of this.

The impact of information and communication technologies has been and is, without a shadow of a doubt, another of the factors of the construction of a global world from which increasingly the universities and the university systems cannot simply remain on the sidelines, but must lead. As Manuel Castells stated, "Les societats evolucionen i es transformen mitjançant la interacció complexa de factors culturals, polítics i tecnològics. En qualsevol societat els paradigmes tecnològics organitzen la gamma disponible de tecnologies al voltant d'un nucli que incrementa el rendiment de cadascuna. L'informacionalisme és el paradigma tecnològic que actualment proporciona la base per a un nou tipus d'estructura social: la societat xarxa, una estructura social formada per xarxes d'informació fetes possibles per les tecnologies d'informació. Aquesta és actualment la forma dominant d'organització social. La innovació, tant cultural com tecnològica, és l'origen del desenvolupament informacional, i la innovació depèn principalment de l'existència en el marc d'una societat lliure d'universitats i centres de recerca lliures i d'alta qualitat. En la llibertat de l'informacionalisme, la ciència i el poder es troben interrelacionats dins un cercle virtuós."[9] (Castells, 2003).

The Catalan universities have known how to participate in these processes and to a great extent have been pioneers in terms of globalisation and capacity of international projection and presence, both in Spain and in Catalan society itself. The university community has naturally internalised the need to be present in the world, especially with regard to scientific activity and research projects. We may state that these dynamics are founded on two pillars: in the first place, participating and taking advantage of European initiatives; secondly, constructing new, innovative projects from home. A sign of the former is the growing participation by Catalan students in the EU Erasmus programme, the very good situation in respect of the participation by research groups and researchers in international and Europe-wide projects (Framework Programmes) and the recent adjudication of the *Erasmus Mundus* European master's programmes and the Starting Grants.

TABLE 10

Most outstanding Spanish universities of the 6th Framework Programme.

University	*Participation*	*Leadership*
UPM	102	5
UPC	**89**	**10**
UB	**64**	**4**
UAB	**55**	**2**
UPV	45	5
UV	36	4
UPF	**35**	**5**
UAM	30	0
URV	**29**	**4**
UCM	29	2

SOURCE > Generalitat de Catalunya, 2007b.

Examples of the second aspect are the ICREA Programme of attracting internationally relevant researchers to Catalonia or reincorporating native researchers who left at some time in the past, the development of certain research centres of reference, in a joint alliance between the Generalitat and the Catalan universities, direct participation in international alliances or networks and the consolidation of certain teaching offers that would

be fitting for a country internationally renowned for its quality education (doctoral programmes, Barcelona Graduate School of Economics, BioCat). One need only look back some thirty years to see that the leap that has been made has been spectacular. Just referring to scientific research, we have gone from being a country with no tradition in science to being an approved country (and a competitive one in terms of scientific production) internationally.

TABLE 11

Nationality and country from which researchers of the ICREA have arrived (2007).

	Nationality	***Country come from***
Spain	112	66
Germany	10	22
Italy	10	6
United Kingdom	9	16
Holland	8	7
Argentina	5	-
Russia	5	2
United States	4	32
Bulgaria	2	-
Hungary	2	-
Switzerland	-	6
France	-	4
Brazil	-	2
Norway	-	2
Others	-	11
Total	**167**	**176**

SOURCE > ICREA.

In general, as shown in table 12, it can be observed that in the case of doctoral students and with regard to extra-community countries, the bulk of teaching and research agreements and exchanges concentrate on countries of Latin America where Spanish is spoken.

TABLE 12

Place of origin of international doctoral students.

Academic year	*2002-2003*		*2003-2004*		*2004-2005*		*2005-2006*	
	Number	*%*	*Number*	*%*	*Number*	*%*	*Number*	*%*
Africa	15	6.2%	11	2.7%	16	5.9%	16	4.3%
Asia	7	2.9%	3	0.7%	3	1.1%	10	2.7%
Europe	39	16%	35	8.6%	52	19.1%	69	18.6%
Latin America	175	72%	135	33.1%	197	72.4%	272	73.3%
Russia	4	1.6%	-	-	2	0.7%	-	-
United States and Canada	2	0.8%	2	0.5%	1	0.4%	4	1.1%
Not specified	1	0.4%	222	54.4%	1	0.4%	-	-
Total	**243**		**408**		**272**		**371**	

SOURCE > UNEIX.

Although there is increasing mobility among students and the teaching and research staff of Catalan universities, it is still quite limited. Therefore, in this globalised context that has been described, the universities must be able to train in and transmit skills and aptitudes to the whole university collective to live and work in an international context. There is a need to introduce strategies of internationalisation in all university areas and assimilate the reality of a global world, economy and society to improve the attention given to local students.

Despite these determining and certainly positive factors in the degree of internationality of the Catalan universities, there is still a long way to go in Catalonia with regard to internationalisation and presence.

The initiatives carried out by the universities in international areas are normally fragmented, very unsteady and unstable. A multiplicity of strategies and initiatives coexist, that are unviable for a university reality and a medium-sized country with no State of its own. It is neither feasible nor sustainable to wish to cover collaborations with a multitude of geographical areas and all branches of knowledge. It becomes essential, on the one hand, to prioritise actions and strategies; and on the other, to consolidate them and provide them with the means to allow medium and long-term projects.

In this field, the public administrations have developed erratic policies. Beyond doing the right thing and issuing calls for scholarships and aid for studying or researching abroad, or programmes such as the ICREA, or the

creation of research centres of excellence, there has been no real policy of international relations and external presence which, without a doubt, the administrations must carry out in close collaboration with the universities themselves, who are the protagonists of such initiatives. There are no facilitating instruments and common support services and infrastructures for internationalisation and mobility (housing, individual and family accompaniment, information and advice to different groups, information and presence services for foreigners, etc.). Along these lines, it is essential to generate joint platforms to project presence, international relations and mobility in all senses, and it is necessary to be committed to the education and development of new professionals who are highly qualified for these functions.

Future outlook

The aspects that will determine the future of the Catalan universities no longer depend on national factors alone, but increasingly on international ones. Therefore, foreign relations and the development of international policies are a priority for the universities that must be included as a transversal aspect in the generic aims of the universities and of the university system. The *University of Catalonia* aims to promote a process of prioritisation and of collaboration to achieve a successful position on the international scene of each of the public universities and the system as a whole.

To this end, the *University of Catalonia* is committed to a common, coordinated policy on international relations issues, with joint projects and with the support of the governments for the international projection and the development of specific initiatives. One of the aims of a more coordinated policy ought to be the ability to increase projection and visibility as a system, including universities, centres and science parks, innovation institutions and, indirectly, the whole of Catalonia. A priority area in which the universities of the ACUP wish to work together is the creation of a competitive Postgraduate Inter-University Platform on a European and an international scale (see project 5).

In general, it must be borne in mind that it is not merely a question of increasing the number of foreign students and teaching and research staff, but for each measure of internationalisation to contribute to achieving the priority goals of quality and the consolidation of academic profiles (education and research). To this end, there is a need to focus on certain projects, geographical areas or scientific fields and improve the systems of information, follow-up and assessment of the activities in the international sphere.

In order to meet this challenge, as has already been said, we are not starting from scratch. The system has a notable trajectory in Catalonia in the context of Spain, with some instruments of reference that need strengthening: the ICREA, research centres of excellence, teaching offers (*Erasmus Mundus*, quality doctorates), scientific infrastructures with a cross-border scope and reference (Sincrotró ALBA, Mare Nostrum Supercomputer), business schools of international reference, or collective capabilities and a reality as a dynamic, welcoming country, with great cultural and social vitality.

In order to be present on the international scene and compete effectively against other universities around the world, we must position ourselves with unique, specialised profiles (complementary in the framework of the *University of Catalonia*). Especially in the field of research, quality and internationality are mutually conditioned. In order to be able to establish high-quality contacts in innovation, excellent results are needed in research. And in order to obtain excellent results in research, we must attract highly qualified scientists who have to be sought both inside as well as outside the country.

In order to be present in the field of R&D and receive part of the increasingly large European research grants (Framework Programme, ERC), the Catalan public universities must foment excellence research throughout the region. As most research projects involve international teams, there is a need to promote new ways of working and better capabilities for the management of projects and the development of qualified professional profiles in this field.

Bearing in mind that today only a small percentage of Catalan university students participate in mobility programmes, all of the universities must be instilled with an attitude to promote mobility and the ability to live and work in an international context. It is decisive to promote skills and knowledge of an international nature in all university students through specific seminars, materials or by adapting the syllabi.

Finally, all sorts of resources must be provided – by the institutions themselves and the competent public organisations – to foster the universities' international relations policies.

Strategies and projects

Strategy 33 > Foment a common, articulated policy on international relations

The main aim related with internationalisation consists of fostering a coordinated international relations policy made up of all of the public

universities of Catalonia. Only if forces are united will it be possible to achieve greater visibility, as well as a better positioning on the international scene.

Therefore, there will be a need to reflect as to the instruments that the *University of Catalonia* has at hand in order to increase its presence abroad, since coordination among these bodies would be desirable and beneficial. Currently, each university of the ACUP has specific structures that look after international relations and cooperation. In general, they are structures that are directed by a vice-rectorate, with the aim of giving them the maximum possible political relevance. The international relations offices and those devoted to cooperation or internationalisation try to oversee that the projects and alliances with other centres materialise with the maximum degree of success.

In the future, the idea is to align the work done by all of these offices and thus achieve a more coordinated, cohesive international policy among all of the Catalan public universities, yet maintaining a diversity of goals and priorities wherever it is felt necessary.

Project 36 > *University of Catalonia* international relations plan
On the basis of prior diagnosis, elaborate a *University of Catalonia* international relations plan formulating joint specific goals and lines of action. The plan shall include the necessary resources for its application and an agreed system of indicators to programme and evaluate action of an international scope.

Strategy 34 > Increase and improve the quality of student, teaching and research staff and administrative and service staff mobility

One main goal within each university's processes of internationalisation is to increase the number of students that spend one or two semesters studying at a foreign university. The experience obtained abroad contributes, on the one hand, to obtaining scientific competency, and on the other, to the personal development of the student. Furthermore, the experience abroad is an increasingly important requisite when joining the labour market.

However, there is not just a need to increase the number of students that participate in mobility programmes, but, and above all, the quality of these programmes. Greater emphasis must be placed on students' competency in a language prior to going abroad so that the greatest benefit can be drawn from the stay. The places on offer in the mobility programmes should be of very good quality. Moreover, in order to encourage going abroad, there must be a guarantee that the stay at the foreign university will not mean that students will finish their studies in Catalonia any later. This is why it is

necessary to coordinate with foreign universities, sign agreements and even create shared courses between Catalan universities and universities from abroad in order to ensure the recognition of the qualifications the students obtain there. The insecurity as to the recognition of the subjects studied and the qualifications obtained abroad and the lengthy procedures necessary to obtain it are important factors that may stop students from deciding to go and study abroad. The *University of Catalonia* is committed to increasing the recognition of qualifications and credits obtained abroad, making full use of the tools that currently exist, such as the ECTS system and the Diploma Supplement.

However, other incentives are needed for mobility and to improve the support given to students. It is important, for example, to offer them broad academic advice as to the possibilities they have of going abroad and offer them specialised language courses. Finally, the importance of specific scholarships for studying abroad should be highlighted.

As regards doctoral students, encouragement of their mobility is also essential since it is more common every day for them to work as part of international research teams. In order to provide an incentive to doctoral students to spend time abroad, from the *University of Catalonia* financial support and agreements with internationally recognised research institutions will be promoted.

As for student mobility, there is a need to foment not just mobility between universities but also mobility aimed at the training of professionals. Agreements must be signed with enterprises in other countries so that students can do work placements there.

If it is a basic necessity for students to spend some time being educated abroad, mobility is also interesting for the other two major professional collectives present at the University. For the teaching and research staff, a stay at a university abroad may mean the chance to encounter new pedagogical models, have more time to develop a concrete project or establish contacts and involvement for the researcher's task. As far as the administrative and service staff are concerned, first hand knowledge of other experiences of university management, at all levels, may be a most enriching experience for the University itself and for the system as a whole.

Project 37 > Shared qualifications

Promote shared qualifications and double degrees with universities of other countries.

Project 38 > Office of support for mobility and strengthening of the programme of scholarships abroad

Promote a joint office of support for mobility between universities as well as a new programme of scholarships abroad for undergraduate, postgraduate

and post-doctoral students, uniting forces between the universities, the Government of the Generalitat de Catalunya, the Central Government and other institutions and bodies.

Project 39 > International mobility plan for teaching and research staff and administrative and service staff

Promote an international mobility plan for professional development and the training of the teaching and research staff and the administrative and service staff at the core of the public universities of Catalonia.

Strategy 35 > Increase the capacity to attract and retain talent

Another goal in the field of internationalisation is to increase the number of students and teaching and research staff who come to study, teach and do research in Catalonia. This goal does not simply consist of getting more students and teaching and research staff to come. But above all, those who do should bring talent and added value to the university system. This is why it is important to open up the systems of recruitment and selection to an international scale.

Internationally, Catalonia can be more competitive in the field of postgraduate studies than for undergraduate studies. This means that, as a matter of priority, the universities must seek to attract recognised researchers to do research in Catalonia. To this end, there is a need to specialise in certain areas of research since it is not possible to do internationally recognised research in all disciplines. Internationalisation therefore requires concentrating on those areas in which achieving excellence is viable.

In order to facilitate the stays by students and teaching and research staff at Catalan universities, there is a need to improve the attention and services they require. There is a need for close collaboration with the foreign offices and the student services offices, but also with associations and initiatives that deal with advising students and the teaching and research staff in the social and cultural areas. Difficulties with the foreign offices and the handling of papers and permits can often cause frustration, which leaves a negative impression even if the academic experience is in the main a positive one.

Another important matter to be taken into account when attracting foreign university students is the housing situation. In a country in which the supply of rented accommodation is far below the average for Europe, university students are one of the groups to suffer the consequences most. The universities and government administrations ought to make a special effort to give an incentive to the creation of university residences and promote rented accommodation for both students from abroad and nationals.

The Catalan language has often been presented as being a hindrance to the incorporation of foreign students and lecturers. Beyond the controversies

created artificially or with political intentions, the figures show that Catalonia's ability to attract is of the highest in Spain. There is a need, however, to properly inform those who intend to spend some time at a university in Catalonia as to the real linguistic situation they will encounter. Therefore, this situation must be known, and the language in which the classes will be taught must be known in advance.

In addition to offering information, there is a clear need to offer the tools to acquire basic linguistic knowledge, which any university student is more than capable of acquiring in a relatively short period of time. The linguistic services at the different universities, in collaboration with the Generalitat, have done important work in this field. Correct information and suitable tools, together with the progressive and necessary incorporation of the English language in the education system in Catalonia, will enable the presence of Catalan in the classrooms and laboratories to be considered normal by foreign visitors, which is something obvious for a country where it is the official language, and even an element of personal enrichment, as is already often the case (see project 10).

Project 40 > International reception

Re-think and promote the services and infrastructures devised to receive foreign university students (housing, transport, Barcelona University Centre –BCU–, etc.)

Strategy 4 > Project Catalonia and Barcelona as ideal places to pursue internationally recognised postgraduate and doctoral education

(This strategy is developed in Chapter 1 on the University of Catalonia*.)*

Strategy 36 > Foment the involvement of the universities in major research projects and in scientific, technological and cultural facilities

Closely related with what has been said before, the proposal is to concentrate efforts that allow the involvement of the universities and the whole system in major research projects and in scientific, technological and cultural facilities. There is a need to generate the critical mass necessary and bring expertise and resources to the generation of large projects of international scope between the public administrations (Generalitat de Catalunya, Central State Government, Barcelona City Council), the private and social bodies and the universities. Specifically, the aim is to strengthen the capabilities of the Euroregion in the European context, facilitating instruments for greater territorial cohesion in education, research and innovation.

Strategy 37 > Strengthen active international presence in forums, international bodies and supranational institutions

The need to continue to extend the range of university influences makes joint political activities necessary. To this end, the Catalan universities are already a part of and lead different international networks of universities from around the world, which enable sharing experiences and setting ambitious goals. Here, there is also a need to study the advantages of a more united – which does not mean uniform – position. It would be desirable to bring together the efforts that each of the universities that are a part of the *University of Catalonia* carries out individually. In this way, it will be possible to occupy a more relevant position in the main places and bodies where decisions are taken. Moreover, there is a need to foment the presence of the *University of Catalonia* in international education discussion forums such as the EUA, the International Association of Universities (IAU), the OECD or the EC.

In addition, Catalan universities have an increasingly significant presence at international fairs and must contribute to making themselves known in the most prestigious forums and establish new contacts, and hence broaden their sphere of influence. To this end, the promotion strategies of the universities of the ACUP must be based fundamentally on the proper analysis of strengths and weaknesses, since only in areas in which the University stands out due to its excellence can it achieve success in the international context.

Project 41 > A delegation of the ACUP in Brussels

Create a delegation of the ACUP in Brussels whose aim is to promote participation in European projects, participation in public calls and the generation of initiatives.

Project 42 > Agreement for international projection with the administrations and other social agents

Promote a joint collaboration agreement between the Catalan public universities, the Generalitat and the competent Spanish ministry, including the corresponding bodies of international projection to increase the presence of the *University of Catalonia* in foreign countries. The aim is to facilitate the joint realisation of activities in the field of higher education and the mutual recognition of knowledge acquired and qualifications.

Strategy 38 > Educate university students with the capacity to live and work in an international context

After more than twenty years of European mobility programmes like Erasmus, still today, only between one in five and one in ten students,

depending on each university, goes to study in a foreign country (Brus, Scholz, 2007). Therefore, the question must be posed as to how to offer the vast majority of students that do not participate in such projects a European and international dimension during their studies at the Catalan universities (Internationalisation at Home –IaH–).

The knowledge and the command of foreign languages is an essential requisite nowadays. At the *University of Catalonia*, we defend the goal that all of the country's students should finish their studies with in-depth knowledge of at least a third language. Increasingly, classes must be given in a third language at postgraduate level, which will usually be English, but without overlooking other possible languages. That would increase the universities' ability to attract foreign students and help to improve Catalan students' knowledge of languages.

At the same time, actions must be undertaken to facilitate the learning of foreign languages by the university community as a whole. Despite recent efforts, the percentage of people who feel secure enough to communicate in another language is too low, greatly hindering any international opening.

Project 43 > IaH-*University of Catalonia* programme

Promote a plan of action to foment the IaH at the Catalan universities. Specifically, guarantee high levels of knowledge of foreign languages. Urge the Government of Catalonia to increase facilities for the study of languages with more scholarships for students who pass their years, stays abroad, supplementary classes at the official language schools, etc.

Strategy 12 > Promote an integrated, structured policy for universities concerning cooperation and development matters

(This strategy is dealt with in Chapter 2 on the University committed to society.)

3.7

A University at the service of people, generating equity and opportunities for progress

La Universidad es patrimonio de todos, y se ha de conducir según el respeto civil que merece cualquier actividad pública. Con apertura, con tolerancia y con espíritu de hospitalidad a las personas y a sus ideas. Es un espacio de libre pensamiento, que parece una expresión antigua, pero que siempre hay que reivindicar.[10]

Ángel Gabilondo (2008)

Context and diagnosis

Opinion surveys around the world show that the University is one of the most highly valued and appreciated institutions. An immense majority of families would like their children to do university studies and celebrate their obtaining a degree. A study by the Institute of Evaluation of the Ministry of Education and Science (2006b), for example, highlights that 75% of the parents of pupils who finish compulsory secondary education wish for their children to study at University.

It is known that doing university studies helps personal progress enormously, both from the employment and the human points of view. University students have more chances of finding a quality job and of progressing in the work environment. But, moreover, different studies and surveys show that they have a more balanced, fuller life, and they have better indices of what we could call "citizenship". A study carried out in the United States showed, for example, how university students have double the perceived good health than the population without post-compulsory studies, and a blood donation index three times higher, just to name a couple of aspects (Baum, Payea, 2004).

During the Franco dictatorship, the Spanish University was, in the main, devoted to educating the leading classes. A very high percentage of students

came from the well-off classes and, upon finishing, took jobs which were held by the more affluent social strata. By the 1970s, the University became democratised and thousands of middle- and working-class students arrived. This is one of the principal phenomena that help the construction of a middle class that is comparable with the European average. The University is identified by citizens as an important social ladder. Perhaps the most important of all.

In Catalonia, the 1980s was a decade of *numerus clausus* and overpopulated classrooms due to the huge number of students who wanted to follow a university course. In the 1990s, the problem was solved with the creation of new public universities and with the appearance of the private universities. Table 13 shows the spectacular growth in the number of students in university classrooms; from 98,703 students registered for the 1980-1981 academic year to 226,364 students for the 2004-2005 academic year, with a tendency to stagnate starting in the early 21st century.

TABLE13

Evolution of the number of first- and second-cycle students registered at the Catalan universities.*

	1980-1981	*1985-1986*	*1989-1990*	*1994-1995*	*1999-2000*	*2004-2005*
UB	57,455	76,704	85,207	75,875	65,755	56,111
UAB	21,632	28,795	35,564	35,965	39,036	38,117
UPC	19,616	24,118	34,028	39,337	35,976	33,242
UPF				4,973	9,868	10,213
UdG				9,265	13,891	12,680
UdL				10,412	11,600	8,815
URV				10,291	13,072	11,967
UOC					10,374	33,996
URL				6,624	13,574	13,140
UV					3,626	5,113
UIC					2,228	2,406
UAO						564
Total	**98,703**	**129,617**	**154,799**	**192,742**	**219,000**	**226,364**
% Public	100	100	100	96.6	91.13	90.62
% Private				3.4	8.87	9.38

SOURCES > 1999-2000 and 2004-2005 academic years: UNEIX; the remainder: Oroval [*et al.*], 2000. *integrated and attached or associated centres. Own, validated qualifications.

Future outlook

A quality University, open to all talented citizens who are willing to study, is a basic element for the generation of opportunities, equity and social cohesion. The Catalan university seeks to maintain and strengthen this characteristic and this function in the future. In Chapter 5, on the third mission of the universities, the role of the University as a motor of economic development and welfare in society was stressed, and in Chapter 2, on the University committed to society, its pledge to the values of democracy and the Catalan culture was highlighted. But beyond its commitment to society, the University also has a commitment to individuals. As defined in the Bologna process, students must be the centre of the University and not merely the recipients of good courses based on modern pedagogy.

The social dimension of education must be borne in mind, ensuring the conditions of successful learning. This, as well as good facilities and suitable equipment, implies the support for the day-to-day life of the learner. The *University of Catalonia* is committed to improving services to students with the main aim of improving learning and its social function.

The new scene set by the EHEA also requires students to be more active in the classroom, not just to act as consumers who are preparing for a job, but who develop a sense of belonging to the University. The University must be more than a public service: it must be a *universitas scholarium et magistrorum* (EUA, 2005b). Hence, mechanisms must be found to increase student involvement in university life.

The *University of Catalonia*, as a socially sensitive public institution, seeks to be the instrument that enables citizens to build their dreams of personal progress. There is no doubt that equal access to education, at all levels, is an essential component of the welfare state. The most important element in order to guarantee such equality of access to university studies is the economic one. It should be highlighted that one of the greatest shortcomings of the Catalan university system, and by extension the Spanish, the trait that poses the widest gap with respect to the most advanced European university systems, is the extremely weak structure of scholarships, aid and loans for studying, as can be seen in table 14: Spain is at the end of the queue of European countries with regard to public subsidies (scholarships and aid) for university students.

The Spanish model of subsidies, which is generalised in registration fees regardless of the student's economic situation, and, at the same time, the weak structure of scholarships, aid and loans, are clearly regressive and do not guarantee equity or equality of opportunities. Furthermore, this model generates other dysfunctions, such as lower academic performance than would be desired or low student mobility, derived from the fact that a high percentage

of students have to work in order to pay for their studies. It is foreseen that the progressive adaptation to the EHEA (which takes into account all of the hours the student devotes to studying and seeks high inter-university mobility) will highlight these dysfunctions yet more clearly. It is therefore essential to introduce a new policy on scholarships, aid and loans in Catalonia.

TABLE14

Public subsidies for students and families as a percentage of total public expenditure on higher education and the GDP (2004).

	Direct public subsidies in higher education institutions (% of the total)	*Public subsidies for higher education, students and families (% of the total)*	*Subsidies for education for students and families (percentage of GDP)*
Norway	59.2	40.8	0.99
Denmark	69.7	30.3	0.76
Sweden	71.8	28.2	0.59
Netherlands	73.0	27.0	0.37
Finland	82.8	17.2	0.36
Austria	80.2	19.8	0.28
Great Britain	76.1	23.9	0.24
Germany	82.1	17.9	0.21
Belgium	84.3	15.7	0.20
Ireland	85.2	14.8	0.16
Italy	83.3	16.7	0.13
France	92.1	7.9	0.10
Spain	92.2	7.8	0.08

SOURCE > OECD, 2007a.

Strategies and projects

Strategy 39 > Guarantee fair access to higher education via a broad system of scholarships, aid and loans

A new policy regarding university scholarships and aid must be based, in the first place, on a significant increase in the public resources devoted to it. The aim is that in 2010, some 30% of students will have a scholarship and that within seven years, the percentage of students awarded scholarships will reach the average for Europe. Secondly and definitively, there is a need to consummate the transfer of competencies from the Central Government

to the Generalitat. Only in this way will it be possible to design a policy in keeping with the reality of Catalonia.

The scholarships and aid must change from being a public investment in university registration to a direct investment in the student, better respecting equal opportunities. Likewise, the continuity of public financial support must be linked to the students' academic progress and performance. Moreover, scholarship-salaries need to be progressively introduced to the students, which will enable them to give their full attention to their studies. Low-interest loans, to be returned upon entering the working world, are another useful instrument of this new policy. Although in recent years such loans have begun to take root, their dissemination and utilisation must be intensified.

When establishing a new policy for university scholarships and aid, a distinction must be made between undergraduate and postgraduate studies, as well as between their different goals. Undergraduate studies require a general scholarship policy, adapted in reference to the number and resources assigned as a whole, but also to the economic and social reality of Catalonia. Access to undergraduate courses must be universal, since it is the level of studies that will later facilitate professional and economic development. To get access to aid, income criteria especially, though not exclusively, must be taken into account. Moreover, in the case of postgraduate studies, aid must be differentiated in accordance with the goal pursued. The preferential credits mode must only be addressed to those students who, once in the job market or capable of entering it, wish to lengthen their studies. Scholarships must be clearly targeted at attracting talent, but differentiating between the resources that will later be susceptible to becoming an investment for the development of the Catalan society, and the resources targeted at cooperation for the development of other societies.

As for doctorate studies, a sufficient map of competitive aid must be structured, exclusive to this level of studies, adapted to the structure and duration of the teachings and in harmony with similar aid offered by other European administrations. As a priority, this aid must help towards success by providing exclusive dedication to research and reducing the current length of such studies.

It is equally necessary to simplify the different systems of pre- and post-doctoral scholarships and aid, facilitating existing scholarship modes and avoiding duplicities, abridging the selection systems and ensuring that they achieve, within the time established, the goal of contributing to the education of researchers and the start of the academic-research career.

The new policy regarding scholarships, aid and loans must be complemented by a social policy at the institutional level aimed at reducing inequalities and help disadvantaged students through rent subsidies, subsidies for the use of sports facilities, etc.

Project 44 > New policy on scholarships, aid and loans
During 2009, promote a joint study-proposal between the Generalitat and the universities as to the implementation of the new policy on university scholarships, aid and loans, allowing its execution as of the year 2010.

Strategy 40 > Bring the universities closer to the citizens

In this area, a clearly positive aspect of the present Catalan university system is its physical proximity to the citizenry. There are university campuses in the four capitals – four universities within metropolitan Barcelona, one in the area of Tarragona, one in Lleida and one in Girona – and also in many medium-sized Catalan towns. In addition, the UOC is an element of extraordinary value in ensuring access by any citizen to higher studies and university extension activities. With the *University of Catalonia*, the aim is to preserve and strengthen this sense of proximity to the citizens, understanding that the campus of the *University of Catalonia* extends throughout the region and taking maximum advantage of the opportunities generated by communication technology.

Another important aspect to this end is equity between men and women. In the Catalan universities, a traditional gender division of work can be seen with a highly male teaching and research staff. Whereas the ratio between the categories of university lecturer and professor for men is approximately two lecturers per professor, the ratio of women is approximately seven lecturers per professor. In addition, in Catalonia only 16.5% of professors are women (Observatory for Equality, UAB).[11]

From the *University of Catalonia*, we show our commitment to equality between men and women and aspire to make this goal a practical reality. The goals that must be achieved are equality of conditions of access to teaching, university research and professional promotion within the University. There is a need to organise the work conditions from a gender perspective, bearing in mind the family-career balance and promoting a balanced representation in the different bodies and levels of decision-making within the University. Lastly, it is necessary to promote the gender perspective in the contents of the teachings and research.

Project 45 > *University of Catalonia* Equality Observatory
Based on existing experiences in some universities, create a joint observatory that tries to ensure equality between men and women and fights against sexism.

Project 46 > University Reception Plan
Create specific, especially economic mechanisms to foment access to the *University of Catalonia* by disadvantaged collectives. Dedicate special effort to getting information as to the university offer and the different aid and

scholarships to these collectives and devise specific indicators to be able to measure its success.

Strategy 17 > Promote lifelong learning with a flexible, high-quality offer

(This strategy is dealt with in Chapter 3 on university education.)

TABLE15

Students' place of residence (percentages, data for 1999).

	With parents	*Student residence*	*Shared flat*
Spain	**75**	**3**	**19**
Italy	66	5	26
Portugal	63	10	20
Greece	56	18	17
Ireland	49	11	35
Belgium	35	55	8
France	29	44	19
Austria	24	23	39
Netherlands	16	68	13
Germany	12	33	43
United Kingdom	12	34	48
Sweden	12	70	10
Norway	10	33	37
Denmark	4	36	25
Finland	4	75	7

SOURCE > Mora [*et al.*], 2000.

Strategy 41 > Improve the quality of life of university students

The quality and services of the university campuses must be improved, and they must offer more support to the students. In addition to teaching facilities, there is a need for good sports facilities, the promotion of associations, ample public transport at affordable prices, places where people can meet and where cultural activities can take place, Wi-Fi connection areas, as well as more accommodation and residences. As is mentioned in strategy 39, services such as sports facilities need subsidising so that they are free for students, and language courses should also be subsidised.

An important aspect in this regard is the subsidies for rent and the construction of student accommodation. As can be seen in table 15, Spain

is the European country with the highest percentage of students living with their parents. At the same time, it is the country where the least students live in student residences. Investment in accommodation and residences for students will also have positive effects on student mobility.

Project 47 > Public transport prices for university students
Negotiate an agreement with the public transport authorities to offer passes and reduced fares for students.

Strategy 42 > Promote the involvement of students in extracurricular activities and in alumni networks

As we have already mentioned in chapters 2 and 3 on the University committed to society and university education, it is more important every day for students to acquire certain abilities, skills and aptitudes in addition to their specific area of knowledge. One way of acquiring them, which is important for a successful future insertion into the labour market, is the participation by students in extracurricular activities, such as student associations, their involvement in academic activities or in libraries, laboratories or research groups. Therefore, the universities need to encourage students to join associations and get more involved in university activities related with teaching, research or the transfer of knowledge to society. Support must be given to student associations and other social organisations.

Another aspect which is gaining importance daily is alumni networks. For the universities, seeking the direct and indirect involvement of the students who over the years pass through the classrooms is a decisive factor in maintaining the institutional vitality and permanent dialogue with society. This practice, which is widespread in the English-speaking world, is practically non-existent in our country. Therefore, initiatives must be developed to connect both local and foreign alumni to the universities. This connection represents a further bridge of contact between the universities and society, and may, in addition, lead to the generation of philanthropic resources.

Project 48 > Scholarship programme for professional work placements
Initiatives that enable the development of professional work placements by the students at the universities through scholarship-salaries.

Project 49 > Promotion and creation of alumni networks
Develop a joint strategy, promoted by the ACUP, for the promotion of alumni networks at the different faculties, schools and universities.

3.8

A University based on flexible personnel policies, aimed at promoting talent and confidence

Realisation of the vision for higher education [...] is wholly dependent on the people in higher education. [...] An effective, fairly remunerated, professional and well-motivated workforce lies at the heart of the high quality system of higher education.

Ron Dearing (1997)

Context and diagnosis

The pivotal role that corresponds to the University in the knowledge society puts it at the centre of cultural, social and economic discussion and in all political agendas. Throughout the world, but in Europe in particular, the university systems are undergoing a process of revision. There is a need to remodel an institution that must respond more efficiently and more efficaciously to the interests of society and, at the same time, must keep the values of independence of thought and of critical spirit on such essential matters for human development as are knowledge and science. All novel approaches proposed or implemented establish a system of tension and balance between the university decision-making mechanisms, the diversification of funding and accountability to society. Behind all of these changes, however, lies a basic premise: in the new knowledge society, for the first time in the history of mankind, the human mind is a direct productive force and not just a decisive element of the system of production. Therefore, it becomes more obvious than ever that the greatest value of the university institution lies in the people that constitute it.

Despite the fact that the validity of university autonomy is not being questioned, and the wording of the laws that regulate the universities defends it, the truth is that the reality shows continuous tension and a

trend towards the limitation of this autonomy. This is especially clear in two fundamental areas: the selection of staff, both academic and technical or administrative, and the definition of internal policies that stipulate how the careers of the university personnel should develop. Everyone is aware that personnel policies are key to university autonomy and the quality of the institution, a complex organisation based on highly-qualified staff.

The EU insists greatly on university autonomy and on responsibility and accountability, inviting member states to orient their university systems according to a framework of general regulations, scientific policy goals and financing mechanisms, but handing over full institutional responsibility in front of society to the universities. While the definition of the decision-making mechanisms at the University essentially refers to its structure and system of governance, the personnel policies are far more related with the concerns of the teaching and research staff and the administrative and service staff, who, in turn, cannot be separated from the viewpoints of the system in which labour relations are organised. In this environment, internal tensions arise between institutional and personal autonomy. The central question is how to relate the broad and highly important institutional responsibility with the need to guarantee and encourage individual creativity, academic freedom and personal involvement, always responding to the expectations and needs of society.

In recent years, since the passing of the Organic Law on Universities (LOU, 2001), the Catalan Universities Law (LUC, 2003) and the recent reform of the LOU (Organic Law Modifying the Organic Law on Universities – LOMLOU, 2007), quite considerable changes have come about in the profile of the teaching and research staff of the Catalan University, such as the introduction of new categories of contracted teaching and research staff, stimulated in Catalonia via the Serra-Húnter Programme, and the curbing of the growth of civil servant teaching and research staff positions derived from the application of an already dated process of entitlement. The following tables show this evolution towards a broad, complex range of figures of teaching and research staff imposed on the University by the current legal framework. Significantly, 63% of the increase in teaching and research staff takes place in the form of temporary contracts or the hiring of less qualified personnel.

Also shown is the evolution of the number of students, decreasing in recent years in conjunction with the country's demographic decline, which places Catalonia in a relatively good position on the international landscape concerning the student-teaching and research staff ratio.

TABLE 16

Equivalent to full time teaching and research staff by categories (Total Catalan public universities*).

	1999-2000	*2006-2007*
Associate	2,144	2,736
Medical associate	339	444
Permanent foreign associate	16	15
Replacement associate	250	21
Contracted professor	-	9
University school professor	235	263
University professor	1,169	1,375
Emeriti	11	50
Associate lecturer	-	267
Permanent assistant lecturer	-	324
Part time assistant lecturer	-	182
Professor lector	-	528
University school lecturer	1,592	1,324
University full lecturer	3,402	3,667
Visiting	56	71
Others	184	91
Total	**9,398**	**11,367**

SOURCE > UNEIX. * excluding UOC.

TABLE 17

Ratio of equivalent to full time university students to equivalent to full time teaching and research staff.

	2000	*2001*	*2002*	*2003*	*2004*
Sweden	9.3	9.3	9.1	9.0	9.0
Norway	12.7	11.5	13.2	11.9	12.0
Japan	12.9	12.8	12.6	12.4	12.3
Finland	16.1	16.8	12.6	12.3	12.4
Germany	11.7	11.9	12.1	12.2	12.6
Catalonia	**16.4**	**15.3**	**14.0**	**13.4**	**12.8**
Spain	16.9	14.2	14.6	13.3	13.3
Netherlands	12.6	12.6	13.0	13.4	13.6
United States	14.8	14.9	17.1	15.2	15.8
Great Britain	17.6	17.6	18.3	18.2	17.8
Belgium	19.9	18.1	18.7	19.2	19.4
France	18.6	18.9	18.7	18.6	19.4
Italy	24.1	23.1	23.7	22.3	22.5

SOURCES > OECD; for Catalonia: Report on the University System.

Contrarily, the data on the age distribution of the teaching and research staff show that the University in Catalonia faces a major challenge: the replacement of the first great wave of teaching and research staff that joined the University when LRU was passed in the early 1980s.

TABLE 18

Teaching and research staff age pyramid.

University	*Age brackets*	*1999-2000*	*2006-2007*
UB	< 45	1,934	1,492
	45-55	1,475	1,648
	> 55	545	1,162
	Total	**3,954**	**4,302**
UAB	< 45	1,391	1,464
	45-55	818	1,070
	> 55	332	669
	Total	**2,541**	**3,203**
UPC	< 45	1,306	1,166
	45-55	654	798
	> 55	287	519
	Total	**2,247**	**2,483**
UPF	< 45	589	543
	45-55	179	284
	> 55	43	122
	Total	**811**	**949**
UdG	< 45	475	679
	45-55	146	272
	> 55	43	98
	Total	**664**	**1,049**
UdL	< 45	449	325
	45-55	185	328
	> 55	40	122
	Total	**674**	**775**
URV	< 45	512	798
	45-55	252	405
	> 55	54	184
	Total	**818**	**1,387**

SOURCE > Generalitat de Catalunya.

Finally, the data corresponding to the administrative and service staff clearly show another of the challenges facing the Catalan University, in common with the Spanish: the need to incorporate technical and administrative and service staff in large numbers and, especially with a profile of greater professional qualifications, to improve the system's

administrative and service staff-teaching and research staff ratio, which might lead to the increased professionalisation of university Administration. For the purpose of illustration, despite the positive evolution of the number of administrative and service staff (5,729 for the 1999-2000 academic year, 7,298 for the 2006-2007 academic year), the administrative and service staff-teaching and research staff ratio has hardly improved at all (0.61 administrative and service staff-teaching and research staff in the 1999-2000 academic year, 0.64 administrative and service staff-teaching and research staff in the 2006-2007 academic year).

Future outlook

With all of the known conditioning factors, the framework of autonomy enjoyed by the University enables it to adopt its own strategies in its organisation, teaching and research policy and, in short, in all fields of the activity entrusted by society, under the umbrella of freedom of thought and critical spirit. Also, university autonomy makes the University itself responsible for finding, at all times, the best, most efficient and effective way of accomplishing its mission. In the end, university autonomy is the only instrument subtle enough to arbitrate reasonable measures of improvement in the University's scientific and social endeavour.

The autonomy, self-government and accountability trio should penetrate throughout the University, from the governing bodies to the personnel, whether teaching and research staff or administrative and service staff. Ultimately, in the different units, the teaching and research staff and the administrative and service staff are the ones that carry out the work, according to a breakdown which also ought to be defined autonomously within the units, accompanied by the corresponding accountability mechanism.

In the triangle that defines the university community consisting of students, teaching and research staff, and administrative and service staff, each vertex is essential. In the breakdown of functions, the teaching and research staff represents a value in the academic knowledge of the University, which enables giving and accrediting higher education and serves as a basis and guarantee for the generation of knowledge through the action of research, creation and development. With their work and motivation, the teaching and research staff has played a determining role in taking Catalan universities to the relatively good situation in which

they find themselves today. The administrative and service staff represents the necessary professional handling of the academic complexities and a whole series of services that provide support to the university project. The students represent the University's *raison d'être*, their involvement and capabilities are the ingredients that ensure academic success and its social returns.

The teaching and research staff is also the collective that will, in the coming years, have to pilot much of the effort to adopt the new degree, master's and doctoral qualifications to the EHEA, and will have to deal with the new requirements associated with the foreseeable processes of the accreditation of research activities within the ERA. The first concern must therefore be that of keeping up the motivation of the teaching and research staff and recognise their effort to adapt to the changes. The teaching and research staff need to be able to devote their hard work and effort to the tasks that fall with them, trying to reduce their participation in administrative tasks. Hence, one of the principal axes of action with the teaching and research staff is common with the policies addressing the administrative and service staff, namely their interrelation in the direction shown by the standards of other European universities.

In recent years, the Catalan University as a whole, and some universities in particular, have boosted the concept of global academic dedication to define the global academic assignment of the teaching and research staff (under the majority denomination of "commitment agreement") and, by extension, of the department and the university. The definition of global activity is perfectly in line with one of the four fundamental principles of the *Magna Charta Universitatum*, which establishes the inseparableness of teaching and research activities as a guarantee that the teaching is capable of following the evolution of both the needs and demands of society and of scientific knowledge.

Thus, also in this environment, the *University of Catalonia* is in a relatively good position and at an ideal moment to make the leap ahead. A leap which, conceptually, the system and its parts and individualities have taken in great part and to the extent that their work has become comparable in accordance with international standards. In all, it remains for this evolution of a personal order to become a structural requirement.

Any proposal of change and improvement to personnel policies must fit in with the future panorama that is approaching. There is not, nor is it foreseeable that there might be in the medium term, a situation of greater or full university autonomy in which the Catalan University can define its system of government, its organisational structure and, in particular, the mechanisms for attracting personnel and the framework for labour relations. Contrarily, the situation is of a framework of coexisting labour

regimes (with a civil servant-contractual dichotomy that is not viable nowadays) and a centralised definition of the work regime (teaching and research staff decrees) and the mechanisms of accreditation and access. Any operative proposal of a new model of personnel policy must take this framework into consideration, probably, also thinking of how to make it compatible with a scenario, which is today utopian, of full autonomy.

Strategies and projects

Strategy 43 > Give social significance to the university personnel as a basis for the creation and transmission of knowledge

The individuals that make up the university community are the ones who make the institution a focal point for the creation and transmission of knowledge. Therefore, the retribution of a full time teaching and research staff must correspond, right from the time of obtaining a stable position until promotion to the maximum position, to the corresponding degree of effort and merit. In any case, the teaching and research staff must be at the top of the public administration's wage scale: only the prestige of the profession can ensure the necessary levels of quality and requirement in all processes of academia.

Moreover, university personnel must be made participants in the rest of society. The teaching and research staff should be even more present in places where their expertise may prove useful, whether on government consulting committees, corporate boards of directors or media tribunes. The University must be the great reference point and the central nexus of research and innovation.

Project 50 > New system of bonuses

The current system for the retribution of the teaching and research staff is complex and inefficacious. The proliferation of small bonuses ruins the chances of implementing a wage policy that encourages academic pursuits and their quality. In a setting of the maintenance of the national system of bonuses for civil servants, the autonomous region's bonus ought to consist of two components: one that can be consolidated, related with the accumulation of merits and in accordance with a global evaluation of the academic activity; and one that cannot be consolidated, which varies according to the intensity and continuation of the research function.

Strategy 44 > Promote the identification of the university personnel with the institutional mission

The academic activity of teaching and research staff is complete and varied, but it may change along their professional life, modifying the proportion of time taken up between teaching activity, research and management. The structural complication of the Catalan universities hinders the full identification of the teaching and research staff with the different missions. The teaching and research staff is the basic autonomous unit which acts and must act with academic freedom in a well-identified environment for their global function, which must encompass the three university missions. The University ought to provide the teaching and research staff with the chain of assumption of responsibility, autonomous action and accountability passing through the units (centres, departments, faculties, institutes) so that the teaching and research staff feel identified with the function of their basic unit.

Another aspect that requires going into greater depth is that of the participation by the teaching and research staff in organisation and decision-making. Basic participation in the management of the University is inescapable and common to all of its members, especially those who exercise their profession there stably on a full time basis. Hence, it would be good to dignify the teaching and research staff's dedication to management and, within the framework of dedication of the teaching and research staff, accept certain profiles with some degree of intensification in this field. At the same time, the technical, administrative or academic nature of university tasks should be identified more clearly in order to minimise academic amateurism in technical and administrative management and maximise the action of the teaching and research staff in teaching and research activities. In general terms, there is a need to break with the implicit hierarchy between teaching and research staff and administrative and service staff and allow management in certain areas of activity to correspond to management professionals.

With regard to research activity, despite the fact that it represents the country's research base, it is surprising that it has no explicit recognition, either in the legal definition of the assignments or in the measuring method by the University, or in the very definition of Catalonia's research system. There is a need to stimulate and value scientific leadership, which is also global: in both research and teaching leadership. The necessary effort, made as of the LRU, for the deactivation of the old professorships and the promotion of new, more dynamic departments promoting the University renewal of the 1980s, has, over time, led to the segregation between departmental life, restricted to the formalisation and the distribution of basic resources and the teaching assignment, and the competitive activity

of generating and transferring knowledge, which essentially takes place in research groups. There is a need to foment the identification of all of the tasks as a global function and for the groups also to take part in the definition of the joint teaching project.

Project 51 > Assessment of the research activity

Revalue, at the same time, the teaching and research staff's research excellence function and their retribution in accordance with periodical evaluations.

Strategy 45 > Foment flexible academic studies with a variety of profiles in time and following international good practices

The current rigidity and lack of flexibility on personnel policies, conditioned by strong State and Autonomous level legislative regulation, has opened up large gaps between the working and salary conditions of the different categories within the same university system. Concerning the essential negotiation of work conditions of all parties, there is a need to correct the current fragmentation and singularising of negotiation in the area of labour relations, as well as talk about the working conditions of the university personnel, making a maximum distinction between teaching and research staff and administrative and service staff, given the difference in functions and requirements, via the establishment of coordination mechanisms that facilitate the simplification of the participants in collective bargaining. This would lead to important savings, both in economic terms and in relation to bargaining effort, and would lead to the building of a more equitable work environment open to equal opportunities.

Furthermore, the academic career, in each of its three facets of research, teaching and management, must be far more flexible than it is today. New systems of access and personnel selection should be promoted so as to allow the attraction and retention of talent and highly qualified professionals, as well as to enable individuals to properly adapt to the work positions they have been assigned. The current systems of access and provision are long and loaded down with red tape, leaving little room to sort out the suitability of the candidates insofar as their personal appropriateness. As a result, professional experience, knowledge and expectations, which are difficult for the current selection systems to evaluate, are not taken advantage of. Recruitment techniques and tests must adapt to the needs or requirements of the position, and the merits that have to be assessed must be subject to the definition of the position's professional profile, knowledge, aptitudes and skills. On the other hand,

new criteria of evaluation in assessing merits should be prioritised in such a way that the evaluation of development is preferable to other "merits" such as seniority or the consolidated degree.

Emphasis on access policy should be placed on the figures of the stable teaching and research staff, whether civil servants or contracted, and there is a need for a clearer definition of the temporary contract period as well as that of preparation, education, academic development and follow-up prior to stabilisation (tenure track). In this way, access to teaching assistant positions could be simplified keeping the system of accreditation with all its necessary rigour for participation in the access contest in which the candidate's suitability to the academic project of the receiving unit must explicitly be incorporated.

While access to a stable position (tenure) must be a right for whoever has achieved the quality objectives established by the University, as of their incorporation to the academic career, access to the career must be characterised by the opening of the Catalan system to all of the doctors in the world. Under no circumstances can the period prior to the doctorate or the doctorate itself be understood as a corridor that leads naturally to the tenure track.

The flexibility of the academic career must include explicit policies on gender and career-life balance (see Chapter 7 on the University at the service of people).

Strategy 46 > Foment the professionalisation of university management and the professional development of the administrative and service staff

The good running of the University, its effectiveness and efficiency, lie, to a great extent, in the work done by the administrative and service staff. The process of convergence to the EHEA and the ERA, which involves the whole of the university community, includes the implementation of a great many new processes that require training, hard work and above all predisposition to change. A continuous change such as the one being undergone by the university system forces us to define a human resources policy that helps to plan the future needs of the administrative and service staff, which will certainly be changeable, and facilitate the continuous adaptation of the administrative and service staff who currently belong to the universities.

In general terms, the structure of the administrative and service staff of the Catalan university has inherited an obsolete vision of the mission of the University, almost exclusively focused on the teaching function, and sized on the basis of parameters that are not adjusted to the needs

and demands of society of today. In the area of the administrative and service staff, the University suffers a clear deficit of qualified technical staff, of support technicians for teaching and research, and of top-level managers in order to professionalise the rectorates, managers' offices and the management of the academic units. Thus, the axes of a future policy on the administrative and service staff are the incorporation of qualified technical and management personnel, and the education and training of the staff and their mobility, both internally and externally. Altogether, it means also having to consider an improvement in the processes of access and provision as well as the working conditions.

Administrative and service staff education and training policies cannot work as isolated initiatives but must accompany all actions done in the field of personnel policies. Education must become strategic and must be in line with the institutional projects and challenges. Initial education, continuing education, training in order to acquire competencies and recycling to accompany the professional career are essential for the necessary qualification and professionalisation of the administrative and service staff. At the same time, other complementary forms of training must be made available to the collective of administrative and service staff, in addition to those stipulated in the training programmes, which have proved to be efficient among the collective of the teaching and research staff, such as staying for periods at other universities and at research centres or the activation of temporary leave of absence mechanisms for projects of interest to the University.

A system must be sought that guarantees professional progress for all of the administrative and service staff, directly connected to the personal performance of each employee and the acquisition of certain competencies, and which allows stimulating flexibility of dedication and participation in accomplishing the mission, the vision, the values, the planning and the strategy of the university system. For this, it is first necessary to universalise the professional career, that is to say, establish, in the case of the collective of the administrative and service staff of the Catalan public universities, a professional career of universal and individual scope that is transparent, linear, progressive and motivating. To this end, two complementary or alternative mechanisms can be considered: progression in the work post and, if applicable, horizontal and vertical promotion to other work posts. To this effect, there will be a need to design brackets of progress, coherent professional itineraries and promote a model of education that facilitates and foments the continuous improvement of professional skills. Finally, mechanisms of continuous professional recognition will have to be established, applicable to those who have already attained the top levels.

Project 52 > University Management School
Promote professional development and the training of university directors and managers through collective activities at the ACUP, in collaboration with the Public Administration School of Catalonia and the competent department on university matters.

Project 53 > Bonuses for institutional management
Recognise dedication to institutional management with a system of bonuses in accordance with responsibility and dedication.

Strategy 47 > Promote university staff mobility

In order to respond to the demands imposed by the continuous changes in the current university system, it is necessary to promote skills of adaptation and flexibility, implicit in the challenge of European convergence. Therefore, internal and external mobility mechanisms and a command of a third language must be promoted. Internally, merit-based selection systems must be optimised so as to guarantee the inclusion of the best-qualified personnel as well as more flexibly facilitate the internal mobility of staff due to reasons of suitability of the candidate or to balance workloads resulting from the very growth of structures. With regard to external mobility, in order to be competitive in an international environment, if nothing else there is a need to foment an operative use of English and a global, open vision of the university world. Therefore, there is a need to insist on the provision of language learning and inter-university mobility, requiring knowledge of foreign languages among the access requirements. The fomentation of mobility becomes an ideal tool to increase the global vision and knowledge of the organisation, which also leads to greater institutional identification and satisfaction in professional development.

In the field of academia, the provision of mechanisms to enable mobility between the universities and the business and institutional world is considered highly necessary.

Strategy 35 > Increase the capacity to attract and retain talent

(This strategy is dealt with in Chapter 6 on the internationalisation of universities.)

Strategy 48 > Promote the permanent, joint assessment of university staff

The periodical assessment of the teaching and research staff must be an incentive and must enable recognising the totality of their activity and,

in particular, their role as a basic element of the Catalan research system. The evaluation process, which is essential from all points of view, must be sustainable in the sense that it must not constitute a disproportionate burden for the teaching and research staff. Nowadays, the freeing of the teaching and research staff from the bureaucracy in which it is submerged has become a veritable political cause.

The positive evaluation of the overall activity must involve the reasonable achievement of the objectives set out in all of the facets of the activity. There is a need to insist once again on the fact that, once the tenure track period is over, overcoming the assessment arbitrated by the University, in addition to those other strictly legal ones, will give the right to gain access to a stable position.

The assessment of the development of the administrative and service staff must serve as an essential tool to legitimise public work. This is why there is a need to establish, in a generalised fashion, some systems of analysis that enable finding out how the work each one is assigned is carried out. One possible model is management by competencies, which should reach each and every one of the individuals that make up the organisation. This model involves the drafting of a directory of competencies, adapted to the different types of professional profiles present in the public sector, and the need to establish a standardised system of the certification of competencies.

In order to implement the assessment of development via this system, it would be recommendable to constitute a body that, by grouping together all of the administrations involved, were to offer support and expertise in the design and elaboration of suitable models for public occupation as a whole and certify the achievement of professional competencies.

Project 54 > Personalised academic assignment

Right from the time of access and every six years, in order to coincide with the assessment of research productivity, mechanisms must be established for the assignation of targets in teaching, research and management at a proportion that may be adjusted to the profile of the teaching and research staff and, in any case, changeable every six years.

Project 55 > Assessment of the development of the administrative and service staff

Establish a common system to evaluate the development of the administrative and service staff and facilitate a part of the personal retribution in accordance with the degree of accomplishing goals.

3.9

A University based on broad institutional autonomy and a robust system of accountability

The university is an autonomous institution at the heart of societies differently organised because of geography and historical heritage; it produces, examines, appraises and hands down culture by research and teaching. To meet the needs of the world around it, its research and teaching must be morally and intellectually independent of all political authority and economic power.

Magna Charta Universitatum

Context and diagnosis

The historical European universities are institutions that have traditionally enjoyed great academic, teaching and research freedom understanding that this is a guarantee that knowledge will advance without any external limitations or demands. In this century-old model of institution, it is considered that the University's mission is to meet this historical challenge and map out the way for the future. The aim is to drive society towards social and technological progress and thus achieve a better quality of life and greater personal and social welfare. The University generates models of knowledge production and scientific, technological, social and humanistic progress.

According to professor Joan Subirats, to date, the continental model of university governance has been characterised by a combination of administrative authority and academic protagonism, public protagonism in the funding of the universities and academic monopoly in the governance of the institution. This has meant that the administrative authorities (and the Spanish case is a clear example) regulate the access of students, the syllabi, qualification and assessment requirements and access to the academic career, whereas the university community has exerted control over the other elements of the system (2007).

In a recently published study, professor Terence Karran highlights the paradox that seems to exist in the Spanish education system in terms of autonomy if compared with countries such as the United Kingdom, Sweden or Holland: its system is among those with the highest degree of academic freedom and job protection, but on the other hand, there is a weak institutional autonomy, due mainly to excessive government regulation and control of the system. This leads to homogenisation and makes it difficult for universities to set themselves apart on academic and research strategies that may make them more solid and competitive (2007).

Currently, the more functional and utilitarian concept of the American universities is being incorporated into this historical European model, a model which proposes responding as a priority to the demands and needs of society, with the idea of becoming the main socio-economic driving force in the country. This new concept of University is accompanied by new public and private funding policies, which set goals for the improvement of academic activities and for a more immediate social and economic impact.

In recent years, most universities have progressively introduced internal and external evaluation mechanisms and systems for contracting (programme-contracts and the like), to link obtaining resources with obtaining previously agreed-to results, to advance towards better social performance and greater accountability. The need to account for the results of the public funding of the universities and of earning capacity and instruments of transparency towards society are more than sufficient reasons for positively valuing the assessment of university activity.

Accountability goes far beyond the auditing of accounts. Indeed, it involves financial rigour and efficiency, but it also involves as much or more academic adaptation to the aspirations and needs of society. Accountability is the expression of the good use of university autonomy, put at the service of the custody and enrichment of the knowledge that strengthens society.

This implies using less complex quality assessment systems and also agreeing to the strategic indicators and suitable, reliable communication mechanisms to explain the results. The international league tables (those of Shanghai or the Times) and the Spanish tables (the atlas of the Ministry of Education and Science –MEC–) are increasingly a factor in the evaluation of the universities, and the results of these league tables – it should be said that some are not very reliable – are of greater concern to the University, which is valued by external parameters that are hardly neutral and based solely on competitive concepts, and in which many academics see themselves as being poorly represented. In order to determine and suitably interpret the impact of university activity on society, any assessment must

consider the added value and the strategic value of the universities with regard to the labour market, their cultural function and their function of territorial balance and social returns.

The quality agencies that have been created in European countries promote the systematic evaluation of different aspects of teaching and research: they analyse the syllabi and their implementation, teaching and research infrastructures, the universities' relationship with the economic and production sectors, they verify the effectiveness and efficiency in the management of resources and the rendering of services, and they draft reports on the aspects that contribute to improving the quality of the institution.

The results of these evaluations have a dual application: on the one hand, they promote the academic quality of the universities, since on the basis of their own and compared data, decisions are pushed through to improve the institution; on the other hand, the results obtained by the universities assessed have a direct effect on the economic provisions assigned to them by the administration and, therefore, on their overall funding and future competitiveness.

The new mechanisms of assessment, just as the accreditation of the studies, the accreditation and training of the teaching and research staff or the assessment of research, seek to guarantee some standards of university quality and are highly valued by all of the universities with the ambition of carrying out academic work of excellence.

Reaching a high level of quality is a challenge and, at the same time, an opportunity for the most innovative and competitive universities. The institution must take the initiative in these processes and work internally to suitably project to the outside an image of a quality University. The improvement of internal capabilities, based on strategic centralisation, on the one hand, and broad operative decentralisation of the units, on the other, enables a degree of autonomy of each unit that strengthens institutional cohesion. The internal autonomy of the centres and units and the internal assessment procedures must be programmed in a framework of information, dialogue and consensus in order to obtain the motivating effect within the university community to generate the recognition of effort, the job well done, and the ability to transfer this to society.

Despite this, in these assessment processes we cannot overlook a challenge for university autonomy, since if the University does not take the initiative in its actions, we may find that the processes promoted from without may detract from institutional autonomy and the universities might end up working in tow of external decisions, which sometimes follow arguable criteria that are not always consistent with the proposed university model.

So that the European universities can confront the future fittingly, as well as beat the current rigid, uniform university model which exists in most countries, there is a need to create a lighter regulatory framework that allows the universities to take advantage of their potential, ensure sufficient funding, help towards differentiation and lay the groundwork for each university to develop its own strategic autonomy within a general framework of the return of value to society.

Future outlook

The Catalan university system is advancing towards a closer collaboration between the universities, on the basis of the uniqueness of each one. In this model, the aim is for each university to lead concrete lines of work in education, research and transfer, promoted and respected by the other universities, in the framework of a project of a strong, cohesive country with a growing presence on the international scene.

Along these lines, the ACUP is exploring new models of inter-university collaboration which, under the project of *University of Catalonia* and without renouncing the autonomy of each institution, contribute to deploying more competitive models on the international map of excellence. The Catalan universities must be a synonym of quality, and that is why they must seek individual leadership in specific areas of knowledge. This is why the policies that help towards the differentiation of the universities are important and, in inter-university projects, the leadership of the coordinating institution is bolstered with the contribution of different universities.

On the other hand, this political action of articulating the Catalan university system in favour of a stronger country with regard to Europe and the world must be compatible with the universities' function of regional equilibrium. Let us not forget that the universities are basic social and cultural catalysts and socio-economic motors of the territory, and they contribute greatly to guaranteeing an equitable supply of places in the different regional areas, including that of distance learning of the UOC.

Some aspects of the university system are best regulated jointly, such as, for example, the definition of the academic career, since it enables joint negotiation and agreements between the different interlocutors. On the other hand, there are others in which sufficient autonomy needs to be left to the universities so that they can define their own strategic profile and institutional vision. The secret lies in finding the right balance between some aspects and others.

In order to move towards a model of competitive autonomy, there is a need to strengthen self governance with a multi-annual plan of university funding that ensures this transformation, contributes to the process of change and gives leadership and decision-making capacity. In this area, the involvement of the Boards of Trustees is of great importance.

Strategies and projects

Strategy 49 > Increase institutional autonomy

The second wave of the revision of continental university systems began in the 1990s under government regulation and gradually shifted towards self-regulation. The Central Administration becomes defined as "strategic" and national quality evaluation systems and indicators of improvement are added. Meanwhile, the reform of the internal governance focuses on strengthening the executive authority following the activity, the academic results and their costs internally, and specific rules are developed with the local or regional community. The legislation is concerned with strengthening institutional autonomy, but this is tempered by an external system of institutional accountability.

The current trend in European countries of introducing greater degrees of autonomy brings us implicitly towards a greater emphasis on the comparative analysis of results, an aspect that ends up being directly correlated with the greater efficiency and quality of the sector.

In order to accomplish full institutional autonomy, the universities need to have broad responsibility on their financial plans for the long term, plans for facilities, personnel policy, etc. At the same time, it is positive to keep a certain distance between the administration and the University, through the introduction of highly qualified Boards of Trustees, with greatly involved professionals who are not linked to any political party. These people would have to keep a sufficient distance with respect to the internal affairs of the University and dispose of the necessary time and resources as to be able to concentrate on aspects concerning efficiency in management, quality and access.

There is also a need to increase responsibility in the programming of new activities and the restructuring of existing ones, and have a clear picture of the financial framework in which the University must operate in the medium term: available funding in the coming years, the contribution by the private sector, etc. The universities must be able to create financial provisions with specific purposes and use the funds assigned within the

approved budget; all in all, without any restrictions of the financial rules related with the variables in the formulas that are used as a financial breakdown model. That also includes the right to enter into contracts and agreements that are useful and beneficial for the whole of the University and use the benefits thereof autonomously, without that affecting the breakdown negatively.

There will also be a need to ensure a more efficient use of the buildings and facilities. The University must be responsible for investments, maintenance and revocation, and own its physical resources. It must also be capacitated to buy and sell buildings, as well as build new ones.

Autonomy is also demonstrated by the capacity of diversification, for example, via the development of programmes aimed at vocational training. With regard to research, its management must be strengthened. The unique structure of schools and departments is not appropriate when investments in quality research start to be very high. Collaboration with other research institutes and strategic alliances with industry and other social entities must be stimulated.

Project 56 > Legislative reform

Request that the Catalan and Central governments should reform the respective university laws to remove the excessive regulations that interfere with university autonomy from them. Take advantage of the reform of the LUC in this sense.

Strategy 50 > Centralise strategic functions and decentralise operative functions

The institutional mission must be re-thought. The University must ask itself whether the division into departments is appropriate from an intellectual, pedagogic and administrative point of view. The traditional disciplines no longer fit in terms of intellectual categories and are too restrictive and rigid to tackle research problems that go beyond such frontiers. They often tend to debilitate interest in inter-multidisciplinary and multidisciplinary approaches, especially when teaching and research staff places are sustained only on traditional departments. Some departments are fragmented due to simple territorial reasons and others become huge and difficult to manage. If it is complicated to move the structure of the large university subdivisions, schools and faculties, it should not have to be so complicated to move departments and institutes in case of need. On the other hand, the structures of research and their creation must be able to stay outside the decision-making area of the departments, without being to the detriment of the fulfilment of the duties of the academic staff involved therein.

Also in the area dealing with organisation, there is a need to improve internal capabilities based on strategic centralisation. On the one hand, with powerful strategic directives and a strong government at the core of the management team and the rectorate combined with a broad operative decentralisation in the academic units (faculties, schools, departments, research groups); on the other, the autonomy of these units must come down specifically to full competencies as regards the management of resources and with multi-annual agreements with the governing board of the University, where goals are set and resources and indicators are decided upon. This decentralisation must be accompanied by a strategic centralisation, with shared information and the assessment of results. In short: decentralisation and responsibility.

The area of finance needs stepping up with the clear, transparent deployment of the resources via management contracts or programme-contracts with a clear link between the funding and the goals of each institution, the deployment of activities and the vision of the future, all in all closely linked to the results achieved and the capacity for social returns.

Decentralisation, however, implicitly involves specialisation, and therefore, there is also a need to find the way of integrating this specialisation into the global objectives. At the same time, there is a need for innovating and discovering appropriate incentives to operate more efficiently, reduce costs, increase entrepreneurship and stimulate innovation. Currently, three types of integrator mechanisms can be found at universities. The first is leadership and the construction of a common vision: in some universities advisory councils of deans or the directors of institutes and research centres are used to discuss matters of strategy, exchange information and create the necessary support for the global policies of the institution. A second mechanism is strategic direction and planning, which involves all of the levels of the University where commitments are assumed in accordance with goals and resources. The preparation of contracts with the education Administration may be a trigger to begin a cycle of strategic planning. A strategic plan that includes a general vision of the University, that stimulates transversal projects and, at the same time, respects the projects of the different units. Finally, federalist projects may help to strengthen an organisational change and an adjustment of responsibilities for the introduction of the new planning of university teachings, in accordance with the EHEA.

Project 57 > Internal programme-contracts

The strengthening of the autonomy of the different academic units (faculties, schools, departments, research groups), with full competencies with regard to the management of resources and with multi-annual

agreements with the governing body of the University, must be accompanied by internal programme-contracts where goals are set and resources and indicators are determined.

Strategy 51 > Promote *ex post* assessment based on pre-established goals

Autonomy, both institutional and internal, is based on what we could call "contractual autonomy", that is to say, on medium-term goals that are evaluated *ex post* according to the results obtained via programme-contracts or the like. Therefore, there is a need for a planning framework which, from the assessment of needs to the anticipation of the available resources, may identify the priorities and the goals that must be fulfilled, protected by effective commitments to act.

Today, no one doubts the need for the University to be held accountable to the public bodies, be they governments, public administrations or parliaments, as well as to society in general. This requires less complex, quality systems of assessment, with greater strategic and added value, and also requires agreeing as to the strategic indicators and the mechanisms that will enable explaining the results of the impact of university activity on society.

We must head towards consensual systems of indicators that are conducive to differentiation, but at the same time guarantee reliable systems to compare and assign resources, without them being seen by the administration and the university community as systems of control. To this end, it is important for the same trajectory followed with teaching indicators should be followed with the indicators of research and technology transfer, as well as with the indicators of management and finance.

The universities' systems of evaluation, in general, and of assessment and accreditation of qualifications, in particular, must be simplified and thus it will also be easier to make the results known to society. To this end, the Catalan universities look to internal quality models for each university, endorsed by those responsible for the system, and accompanied by consensual accreditation processes, above all avoiding duplicities of systems and the excesses of control and bureaucracy.

Project 58 > Simplification of systems of assessment

Advance towards a simplified model of the systems of assessment that avoids bureaucracy and duplicities and facilitates the explanation of the results. This model must take advantage of the joint instruments for internal quality and assessment to which project 21 refers.

Project 59 > Assessment of the *University of Catalonia*

Pool the assessments that the EUA has made individually of each of the Catalan public universities and commission a joint assessment of the *University of Catalonia* from the EUA.

Strategy 52 > Extend the accountability of the universities to society

The Catalan universities have a clear desire to implement systems of cost control and other actions to ensure maximum efficiency in the application and the utilisation of public funds. The practice of accountability to society is a key element of the future: accountability of each institution and of the system as a whole, through strategic indicators that are intelligible to the society, the political players and the media. New systems of indicators must be found to help differentiation, specialisation and, also if required, the reorganisation of activities. In this task, the involvement and the leadership of the Boards of Trustees of the universities again acquires importance.

Project 60 > Report on university impact

Draft an annual report by the ACUP-*University of Catalonia* on the social, economic and cultural impact of the eight public universities and present it to the Parliament of Catalonia and the social and institutional agents, as well as broadly disseminating it socially.

Project 61 > Indicators for differentiation and specialisation

Agree, in the framework of the CIC (Inter-University Council of Catalonia), to a concrete, consensual proposal of indicators that favour differentiation and specialisation. These indicators must enable a better follow up of the results of the different studies, take decisions with regard to the programming and structuring of qualifications, render accounts before the social agents and facilitate the system of the assignation of resources.

3.10

A University based on a good system of governance and efficient management

Differentiation is the name of the game
in the coordination of mass higher education.

Burton Clark (1983)

Context and diagnosis

Multiple definitions and interpretations exist as to the concept of governance. In 2000 at the Glion Colloquium held with experts on university policy from around the world, governance was defined as "the formal and informal exercise of authority under laws, policies and rules that articulate the rights and responsibilities of various actors, including the rules by which they interact, so as to help achieve the institution's academic objectives". In contrast with this concept, management is defined by referring to "the responsibility to run the institution effectively and reach the set objectives" (Glion Colloquium, 2000). On the other hand, professor Joan Subirats, when defining the concept of governance stresses "la capacitat de generar acció de govern d'una entitat o entorn concret des d'una lògica compartida per tots els actors implicats"[12] (2007).

In the last twenty years, the University has undergone great changes which have radically affected the running of the institution: it has increased and diversified the number of students; qualifications have opened up in a whole range of studies; people's education has been lengthened throughout their lives; ICTs have been incorporated, with all that it implies (the globalisation of knowledge and internationalisation); the third mission, of being a socio-economic driving force of the country, has been assumed;

the culture of assessment and accountability has been introduced to management and finance. All of this, however, has taken place without any significant changes to the structures and the organisation of the government of the universities.

It is inevitable that changes bring about tensions, especially in the system of the organisation of the universities, which is complex and still devised by a 19th-century University. Guy Neave looks through the organisational changes to the European universities during the second half of the 20th century and defines two key moments. The first he sets in the sixties, when the universities democratised access to knowledge, opening the doors to broad social sectors and sectors of young people, and distributing the internal authority in a collective decision-making model which fragmented and politicised the internal life of the universities with the appearance of the areas of knowledge. The second great change was during the nineties when a second wave of revision was started, reflected in the changes of legislation in most European countries, which reformed the system of governance reinforcing executive authority and institutional autonomy, tempered by an external system of accountability and quality control with independent, external quality assessment agencies and bodies (2001).

In this process of reform, some countries stand out which were pioneers in the changes and now display good results as regards the new structures of organisation and government, with improved academic activity and management efficiency. In 1997, the Netherlands passed the University Modernisation Law. The Law divides the leadership between the rector and the president of the Executive Board, who assume the executive responsibility and the social responsibility, respectively. In Norway, a similar Law in 1996 stressed the definition of the academic area of competency and the technical and administrative area of competency. Also, France assigns important responsibilities to the Board of Governors, formed in the main by businesspeople and regional authorities and presided by someone from without the University. The changes that have taken place in Sweden, Finland, Denmark and the United Kingdom are also important, as they mark coinciding tendencies.

The first of such tendencies is the reinforcement of the autonomy of each university, which concentrates the most significant decisions in a Board of Management with a clear majority of external representatives, and a rector or president appointed by this Board. Also, the capabilities of the faculties and their departments are strengthened. The dean, with a faculty manager, disposes of ample powers, also financial. There is a combination of centralisation in the vertex and a strong decentralisation with significant powers in the units that encompass research and teaching, and powerful systems of assessment by results. In the area of finance there is also more

autonomy, accompanied by mechanisms of accountability, systems that are more closely linked to results and more comparative scales between the country's universities and with those abroad.

Another common tendency in the processes of reform in recent years is the reduction of collegiality in the university levels of government and the reduction of the weight of internal logics, accompanied by greater presence and authority of the representatives of society, understood as a source of university funding. Also, managerial systems are promoted which are aimed at obtaining results, but they are a long way from purely entrepreneurial management systems. In general, new forms of appointment of unipersonal bodies are established and the executive functions are professionalised.

The reinforcement of the executive functions is based on the new means of appointment and the new competencies that are required of executive charges. The existence of collegial areas on an institutional level is also questioned, their dimensions are reduced and external agents are incorporated. Faculties are attributed with advisory functions, with all of the executive power falling with the deans.

Increasingly, the final responsibility of the election of the rector falls with a board, with or without the participation of the academic community. A change is also proposed in the relationship between rectors and deans. The dean, as the central person responsible for the quality and solvency of the studies, acquires greater competencies: he or she manages the academic area, ensures interaction between research and education, prepares the budget and appoints the teaching and research staff. By increasing their responsibility based on results, the directors and deans must be connected to the political direction and, therefore, the rector must be able to decide as to his or her designation. At the same time, a growing presence of interdisciplinary research centres is ascertained. Guy Neave proposes that the departments should be the only academic environment in which the director is chosen through a process of universal suffrage, as a setting in which the teaching and research staff must see their interests defended (2001).

According to Burton Clark, two apparently contradictory forces seem to affect institutional governance: on the one hand, the need to act corporately in a centralised manner; and on the other, the need and the desire to decentralise in order to promote and stimulate innovation and academic capabilities in education and research. He considers that effective, entrepreneurial universities are neither extremely centralised nor decentralised: they are institutionally strong, both at the top and middle levels and at the base of the organisation. The decentralisation of the units (faculties, research centres) contributes to the promotion of the intellectual freedom of individuals and must be accompanied by a strong, entrepreneurial managerial core in order not to miss opportunities. At the

same time, the legal framework must facilitate the conditions of autonomy so that the universities can be differentiated in accordance with their goals and capabilities (2003).

The university systems of a certain territorial area should promote collaboration between their units-universities and their internal actors in order to be internationally competitive. The universities compete among each other but must collaborate in order to give coherence to regional projects that place them better and benefit them both individually and as a whole.

In Catalonia, the situation is defined by the successive laws that regulate the university system. The LRU of 1983 created the Boards of Trustees as important parts of the system, with key functions such as the passing of budgets and other organisational competencies. Assessment mechanisms were also introduced. The 2001 LOU and its later reform have not contributed any major changes. They leave it up to the University to elect the rector, whether this is done by the university community or the Senate. This enables defining universal suffrage as a conditioned election. Also, it gives authority to the University to regulate, via the statutes, the means of appointing the directors or deans of the centre or faculty, while it is the job of the Department Board to choose the departmental directors. The question that is posed is what is the real role of the Senate/Board of Governors, when a majority of its members participate in it as individuals and not representing a specific group? As regards the LUC of 2003, it does not involve any major changes in university governance. It remodels the Boards of Trustees, reducing their size and increasing the presence of representatives from society.

Future outlook

The public University is in debt to society as a whole, and must serve its interests and needs. The university community is a significant part of this society and, as such, must take part in the governing of the institution, but it must not be its only agent. A model that is broadly extended around the world entrusts the economic and financial responsibility (drafting and passing of budgets, control of the economic management), the relations with the social agents and the appointment and dismissal of the highest academic authority to a board of management made up of members who, put forward by different socially representative institutions, including the University itself, are appointed by the Government. This Management Board usually has a figure who assumes executive responsibility.

It would be desirable for the Catalan public university to tend towards such a model. In fact, the government of the UOC already presents some such characteristics. Such a system of government would make it possible to overcome the current difficulties of governance stemming from the accumulation of successive partial reforms that have been incapable of adapting in depth to the changes of context of the University and which, contrarily, have turned complexity into complication.

The current legal framework does not foresee the possibility of a system of governance of this kind. It will have to in the future. Meanwhile, in order to move towards this desirable format, all legally possible measures should be adopted to facilitate governance wherever possible, simplifying as much as possible the present complicated system and favouring the advent of more suitable legislation. It is a question of appropriate process engineering making it possible to reach the goal sought without compromising the management of the present and even improving it.

New systems of governance must be tried in which interrelations will have to be managed with other spheres and levels of government (multilevel government), with a greater multiplicity of actors. The governance or government of complexity is characterised by accepting the existence of interactions between levels, becoming conscious of the interdependencies between actors, assuming that the most important thing is the contents of the policies and not just the defence of areas of competency, perceiving that the problems have multiple aspects and establishing involvement that enables pooling joint resources and strategies for action.

When redefining the forms of governing, common interest must be pursued in spite of the diversity. That implicitly involves establishing pacts, alliances and commitments to collaborate between the different academic and functional units, the internal network, so that they can develop a competitive project in respect of other universities that are on their scale, which are the external network. Forms of governance should be imagined that enable strengthening the collective system of government while maintaining the logics of differentiation, autonomy and responsibility of each unit.

The process of the internationalisation of the Catalan universities is a good opportunity to improve some mechanisms of institutional management. But it must also be borne in mind that the internal balances of an institution like a University are important and, very often, express interests and positions that must not be underestimated in the name of an efficiency that is little sensitive to university and social pluralism. The aim is for the dynamics of change to take place in a climate of confidence and seeking mechanisms of compensation and recognition, granting capabilities and broad autonomy to the academic units.

Strategies and projects

Strategy 53 > Strengthen the strategic and directive-management capabilities of the universities' governing bodies

The management team at universities must include the rector, a reduced number of vice-rectors, the manager, the deans and faculty-school directors, appointed by the rector him- or herself with the participation of the academic community. The role of the Boards of Trustees must be strengthened, with a professional, full-time president and a minimal, highly qualified technical structure. As mentioned in the previous chapter, the universities must enjoy greater autonomy and less government regulation. Finally, management capabilities must be strengthened in a broad sense to all of the parts of the University: governing body, faculties and schools, research centres, departments, service units. To this end, the *University of Catalonia* promotes a balanced system that enables the effective governance of the University and, at the same time, maintains academic autonomy. Of the two options for the election of the rector established by current Spanish legislation, we propose the use of universal suffrage.

Strategy 54 > Improve the abilities of the university system as a whole and clarify the roles of the different bodies involved in the governance of the system

The aim is to avoid duplicities and add real value to the governance of the whole of the university system. The universities are the central piece of the system, having the capacity to define their own strategy according to the goals set and the environment in which they find themselves. The public universities come together in the ACUP-*University of Catalonia*, a body with a capacity to be able to develop inter-university projects and platforms on academic and managerial matters and promote studies of future prospects and strategic development. As of this year, 2008, moreover, the member universities of the ACUP are represented by their rector and by the president of the Board of Trustees, which enhances and promotes the aspect of relations with the society. The ACUP's agreements can be presented to the Catalan Administration for it to assume them, should the Administration deem appropriate. Along these lines, the ACUP and the CIC must seek means of close collaboration that result in the improvement of the Catalan university system (see project 1).

The space for dialogue and planning between public and private universities and the Administration is the CIC, a body of academic coordination,

cooperation and consultation. The Administration of the Generalitat de Catalunya, the General Directorate of Universities (DGU) and the General Directorate of Research (DGR) must ensure social equilibrium in education and research, establishing in a coordinated manner the university map with the universities and the general offer of studies as well as the policies on research that allow doing research at the universities and also, but not exclusively, the development of the nearby socio-economic environment.

The AQU is the agency that, in competition with other European agencies, offers a guarantee of the quality of the activities carried out, accredits internal units and procedures in accordance with European standards (European Association for Quality Assurance in Higher Education – ENQA), and gives support to the universities in the development of continuous improvement, but under no circumstances does it have regulatory capacities.

Finally, a possible Board or Agency of Research Centres of Catalonia must include the direct participation of the universities in its management and scientific bodies.

Project 62 > Board of Catalan Public Universities

Form a Board of Catalan Public Universities with a reduced number of people of scientific, technical and social prestige, presided by the president of the Generalitat. This Board/Council would practise system politics and would function as a strategic link between government policy, the ACUP-*University of Catalonia* and each of the universities.

Project 63 > Joint, efficient management

Develop specific tools and instruments to facilitate coordination, coherence, economies of scale and synergies of the public universities in the framework of the *University of Catalonia* (see project 3).

Strategy 55 > Advance in the structuring of the University into academic units concentrating on training and research

Faculties, institutes and research groups are the central pieces of each university, with the departments as suppliers of individuals and activity, a guarantee of academic quality and continuing education. Each unit must be a kind of agency in which decision-making capacity can be situated in relation with well-defined goals and power can be delegated, controlling the results thereof.

If we wish to advance in the executive and decision-making capacity of the centres-faculties, understanding these bodies as agencies of activity, the statutes need to favour the election of their highest unipersonal bodies of government by the rector, proposed by the academic community from

among the permanent teaching and research staff, seeking profiles of recognised prestige and with accredited management experience.

In addition, new forms of organisation must be found that are also results- and transfer-oriented, freeing the departments of the tensions involved in the management of academic activity. In this way, conflict is avoided which might arise from the concentration of decision-making in traditional governing bodies, and the free development of possible initiatives with a strong research content is guaranteed.

Strategy 56 > Improve abilities to manage the entities linked to the sphere of each university

If faculties, institutes and research groups are the central pieces of each university, there is a series of bodies and entities that are linked and round off their physiognomy. These entities are foundations, science parks, participating centres and research centres, among others. Their importance has grown in recent years and currently they play a fundamental role in the strategic development of any university. If they improve the management capacity of these entities and the coordination mechanisms with the universities, it is obvious that the benefit will be mutual.

Strategy 57 > Increase professionalisation and innovation in university public management

Still today, public university management is a relatively young profession. At the same time, university management has, in very few years, seen its requirements radically changed. Currently, managing the university system or each of the universities is more complex, not just because of the volume of resources and the student and academic population, but also because the University is becoming a key institution in the new knowledge society. The sudden expansion of the university system has on occasions brought about somewhat disordered growth which must be rationalised with a highly professionalised, effective and efficient management (Vilalta, Solà, 2004c).

The proposal is to introduce initiatives and mechanisms that stimulate innovation in public university management and that facilitate cooperation in the framework of the *University of Catalonia*. Along these lines, organisational innovation and the full development of the e-university are fundamental vectors of change in the coming years. In the framework of inter-university cooperation, it is possible and desirable to pool joint management services and platforms, extend good practices, and facilitate

the mobility of university managers and their training for maximum professional qualification.

The administrative and service staff is mainly responsible for and the principal executor of the management of the University. This is why it is essential to encourage their involvement, participation, education and professional development, mobility and promotion and professional qualification. Innovative public management must also develop new professional profiles, take care of high level technical education, be compared internationally and exchange experiences and promote the international mobility of both the administrative and service staff and university managers in general (see Chapter 8 on personnel policies).

Project 64 > e-university

Promote innovation in university management via the intensive, collaborative use of information and communication technologies.

3.11

A University based on a suitable target- and project-based financing model

Investing more and better in the modernisation and quality of universities is a direct investment in the future of Europe and Europeans.

European Comission (2005b)

Context and diagnosis

Evolution of investment in higher education in Catalonia

As we have already mentioned, over the last thirty years, the Catalan University has witnessed a spectacular increase in the number of students in attendance. To address such growth, a significant increase in public investment in higher education was necessary. To this end, for example, current transfers to the Catalan universities by the Generalitat de Catalunya rose from 367,351 million euros in 1995 to 698,725 in 2006. Also, taking the evolution of public spending on higher education as a percentage of the GDP as a point of reference, investment has remained almost steady since the year 2000, with 1.24% (mean GDP for Spain, 1.02% of the specific GDP for Catalonia) and 1.30% in 2006 (1.11 of the specific GDP for Catalonia, source: Generalitat de Catalunya).

According to EU recommendations, and so that the universities can lead the transformation towards a society and an economy based intensively on knowledge, technology and innovation, investment in higher education must be greater than 2% of the GDP, and investment in R&D must reach 3% of the GDP. The figures today, as we have seen, are still a long way from this EU proposal. Table 19 shows expenditure per pupil in different countries of our area. Once again, despite more than considerable funding, our country's universities still have a long way to go to catch up.

TABLE 19

Investment in higher education (as a percentage of GDP).

	1995	*2000*	*2004*
United States	2.4	2.7	2.9
Canada	2.3	2.3	n/a
Finland	1.9	1.7	1.8
Sweden	1.6	1.6	1.8
Norway	1.7	1.3	1.4
OECD average	**n/a**	**n/a**	**1.4**
France	n/a	1.3	1.4
Netherlands	1.4	1.2	1.3
Spain	1	1.1	1.2
Catalan GDP vs Spanish average	**n/a**	**1.2**	**1.2**
Germany	1.1	n/a	1.1
United Kingdom	1.2	1.0	1.1
Catalonia-specific GDP	**n/a**	**1.0**	**1.0**

SOURCES > Data for Catalonia, Generalitat de Catalunya; other countries: OECD, 2007a.

TABLE 20

Per student expenditure at public and private universities in purchasing power parity (PPP).

	2000	*2001*	*2002*	*2003*	*2004*
United States	20,358	22,234	20,545	24,074	22,476
Finland	8,426	11,143	11,833	12,060	12,505
Germany	11,754	11,306	11,860	12,457	12,255
Belgium	10,771	11,589	12,019	11,824	11,842
United Kingdom	9,657	10,753	11,822	11,866	11,484
France	8,230	8,689	9,132	11,303	10,668
Catalonia	**7,700**	**8,187**	**8,875**	**9,261**	**9,815**
Spain	6,712	7,483	8,074	9,131	9,378
Netherlands					8,637
OECD average					**7,951**
Italy	8,136	8,270	8,649	8,777	7,723

SOURCES > Data for Catalonia, Generalitat de Catalunya; other countries: OECD, 2007a.

With regard to the structure of finance, and taking as an example the budget of the Catalan public universities for 2006, 57% comes from transfers from the Generalitat de Catalunya, 12.8% from registration fees and set public prices, 6.6% from transfers from the Central Government, and the remaining 23.6% comes from income generated by research activities (public competitive funding and contracts with enterprise) and various other sources of finance.

Private funding has hardly been developed at all, and outside the university institution, no law of patronage exists to promote it. Despite everything, in the last twenty-five years, the Catalan public universities – in comparison with the universities of Spain as a whole – have generated the most resources from competitive and entrepreneurial funding through contracts and agreements mainly on research, technology development and knowledge transfer projects.

Public university funding in Catalonia

Since the handing over of competencies, the Government of the Generalitat de Catalunya has carried out three most relevant actions with regard to university finance: the establishment of a model of quadrennial programme-contracts with funding based on the targets and results of each public university since 1997; the establishment of a model for the distribution of public resources to the universities as of 2002; and the processing of the LUC, passed by the Parliament of Catalonia in February 2003, establishing the commitment to a significant increase in public resources to fund the university system.

In October 2006, the Generalitat adopted a Government Agreement to improve the funding of the public universities for the 2007-2010 period, in which it shows its disposition to increase the original annual growth forecasts of 7% to 12.13% on average during this period, in accordance with the targets set by the EU for investment on R&D in 2010.

The distribution of this funding is based on input indicators, mainly employing criteria of teaching activity and number of students, hardly taking account of the results of the system or properly dealing with the costs of the R&D, or the basic research infrastructures or the university's third mission.

Progressive adaptation to the EHEA also involves added costs that must be carefully quantified in order adequately to propose future financing. As can be seen in the report entitled *Financiación del Sistema Universitario Español* (Financing the Spanish University System), drafted by the University Coordination Council in 2007, this adaptation requires additional resources valued at approximately 0.12% of the GDP.

Furthermore, the report shows that 20% of the increase in resources required in order to improve the financial sufficiency of the higher education institutions would have to come from the private sector, while 80% would have to come from the public (Central and autonomous) administrations. This report is of great value and must enable an improvement of university funding in Spain as a whole over the next ten years (Ministry of Education and Science, 2007c).

In recent years, the expansion of the university system and its massification have led to historic shortcomings, concentrated in the oldest universities, which need solving in a consensual manner between the universities and the Generalitat. Solving this must involve the start of a debt-free financial cycle throughout the public university system and the deployment of a new model of finance.

With regard to registrations and scholarships, aid and loans, no far-reaching, consensus-driven policy has been developed. The students, the families and society in general are not aware of the real costs of studies, possibly due to a lack of sufficient information and transparency. It should be taken into account that registration fees only cover between 15% and 18% of the real costs of the teaching and hardly take into account the performance of the students and the duration of their stay at University.

▸ Finance, autonomy and accountability

The scarce autonomy of the universities when it comes to the management of the economic resources coming from this kind of financing and the recurrence of programme-contracts means that often the purpose of attending to and financing specific realities, of prioritising milestones and promoting innovative initiatives and special projects that single out the universities, is not achieved. Significantly, the report "Why reform Europe's universities?" by the Europe-based Bruegel think tank (Aghion [*et al.*], 2007) shows that greater financing combined with greater budgetary autonomy lead to doubling the effect obtained through extra resources in the results of university research.

The complexity of university management, the reduced manoeuvring space and autonomy in decision-making concerning financial and internal management matters, the unsolved structural and historic deficits that have been present for years, and the limited capacity to act of the directors and Boards of Trustees all make it necessary to closely relate improvements in funding with the strengthening of the university institutions' management capabilities and the governance of the whole of the university system, as mentioned in chapters 9 and 10 on university governance and autonomy.

Future outlook

There are three principles that must govern university financing: sufficiency, equity and accountability, together with the effective and efficient management of the resources devoted to it.

Sufficiency

Only with stable financing and a debt-free economic situation will it be possible progressively to increase the quality of the universities. Such financing must be based both on the desired university model and on the real costs of the services and facilities. If we want a University which, in addition to the two fundamental missions of teaching and research, also fulfils the third mission, acting as a motor of society and as a catalysing element of the social, cultural and economic environment, one cannot continue to finance it and analyse its needs simply on the basis of teaching indices.

The growth of expenditure that has occurred in recent years at universities, although the number of students has stabilised, can be explained by the increase in the cost of maintaining the buildings and the indirect expenses of research activities linked to competitive projects, which have been financed at the initiative of the teaching and research staff (estimated at 35% of the expenses of the execution of a project). Also to be taken into account are all of the expenses derived from changes in legislation or the new university frameworks (LUC, LOMLOU, EHEA, etc.), among which we can highlight, for the purpose of illustration, the increase in expenses that came about thanks to the introduction, as a result of the LUC, of the contractual teaching career parallel to the civil servant teaching career, with the new figures of associate lecturers and non-civil service professors. In these cases, the University must bear the corresponding social security payments. A second recent example would be the modification, introduced in the LOMLOU, which limits teaching by assistant lecturers who are doing their doctoral theses to sixty hours a year. This measure is most positive, since it improves and promotes these lecturers' research activity during their period of education. However, in this case, the Spanish Government ought to increase its economic contribution to the autonomous administrations so that the latter may deal with the increased cost that this represents. To this end, legislative measures taken by the Spanish Government, which have a direct effect on the competencies that have been fully transferred to the autonomous communities, must include means to foresee who must finance them.

The most recent example of the rise in expenses is the increase of costs that will be derived from the new structure of university studies marked by the adaptation to the EHEA, in which all degree qualifications will have at least two hundred and forty ECTS credits, with the master's degrees having between sixty and a hundred and twenty. Today, neither how nor who will finance the additional cost of the reform has been specified.

Equity

The second fundamental aspect related with financing refers to equity. There is a need for a policy of scholarships, aid and fees that is more equitable and more diversified among the different studies and qualifications (undergraduate and postgraduate). The policy on scholarships, aid and loans must be daring, with far more resources at the disposal of the system to guarantee equality in the access to university teachings, positioning itself at the corresponding levels and not at the bottom of the European league (see Chapter 7 on the University at the service of people). Along these lines, the universities, together with the Generalitat, need to analyse the real costs of the different studies.

Accountability

The third key aspect in university financing is accountability, related with transparency and the evaluation of efficiency and effectiveness. By means of greater financial autonomy, as well as financing based on reaching previously established targets, university financing can be used as a lever for change and improvement. Intensifying the mechanisms of accountability, which mainly takes into account the results of the investment made (output, impact of academic activity, cost-benefit analysis), will contribute to the universities' increased efficiency, thanks to a significant improvement in internal management (see Chapter 9 on autonomy and accountability).

To this end, finance according to targets, through long-term planning and the corresponding programme-contracts, is fundamental. The targets must reach every aspect of academic activity: teaching, research, transfer, evaluation of knowledge and continuing education.

Reforms will need promoting in order to achieve an operative structure of the information referring to the resources used, the processes applied and the results obtained for each of the university lines of activity, which, at the same time, enable objectifying and rationalising decision-making. To this end, headway should be made towards a shared system of information on the basic data of the group of Catalan universities that includes information on finance and costs.

Once a new model of finance is applied, based on the principles of sufficiency, equity and accountability, it may be stated that political support is being given to universities in the new knowledge society, attending to the key role they have in economic, social and cultural development.

At the *University of Catalonia* we propose a new model of finance which, among others, should contain the following aspects: adapting to principles of sufficiency, equity, accountability and effective and efficient management, based upon a broad, sturdy policy of scholarships, aid and loans to students, fully including the indirect costs of R&D&I activities in university funding, defining stable, long-term finance policies for infrastructures and their upkeep (especially R&D infrastructures), foreseeing selective financing for excellence and for individual and cooperative projects as a university system, and facilitating the improvement of institutional management capabilities. At the same time, formulas must be created to diversify universities' sources of finance beyond public transfers. The goal is to reach 1.5% of the GDP in investment in higher education by 2010 and advance towards the 2% recommended by the EU over the medium term.

Strategies and projects

Strategy 39 > Guarantee fair access to higher education via a broad system of scholarships, aid and loans

(This strategy is dealt with in Chapter 7 on the University at the service of people.)

Strategy 58 > Fully include the indirect costs of R&D&I activities in university funding

The current financing mechanism does not take into sufficient consideration the universities' R&D activities: the intensification of research, scientific production, impact levels, the education of researchers and insertion in the employment market, luring and retaining talent, technology transfer to enterprise and institutions, scientific and technological infrastructures, the creation of wealth and technology-based or knowledge-intensive enterprises. Due to all of the above aspects, which are essential for the new Catalan University, specific, basal, long-term finance is needed in addition to the necessary, timely competitive calls for priority projects and activities. It would be advisable for 40% of the new model of public financing to be given over to research.

This strategy must also include the in-depth revision of policies regarding internal overheads of university R&D projects, with an increase in resources to step up activity in scientific policy between the universities and the governments.

Strategy 59 > Balance university budgets

The Generalitat should arbitrate extraordinary financing measures for the public universities and thus be able to place all at the same financial starting point. This action has two aspects. First, it must foresee, in the medium term, the condoning of the deficits of the universities that are not debt-free by means of a budgetary intervention plan to ensure that these deficits do not recur in the future. Second, it must allow the new model of finance required to deal appropriately with each university's costs.

Project 65 > Find a solution to historic deficits

Draft a comprehensive agreement between all of the public universities and the Government of Catalonia to find a solution to the historic deficits before 2010, in addition to the Government Agreement to improve the funding of public universities for the 2007-2010 period.

Project 66 > A study as to the financial needs of the universities

Joint commissioning by the Generalitat de Catalunya and the public universities of a team of experts to define the financial needs of the Catalan universities in the coming years.

Strategy 60 > Define long-term, stable finance policies for university infrastructures

There is a need to review financing with regard to the upkeep of buildings and facilities for education and research. This cannot be assigned merely on the basis of the surface area constructed, without taking account of age, adaptation to the standards and the historical and cultural nature of the buildings and facilities. In recent years, full priority has been given to new buildings, overlooking the maintenance and adaptation to safety measures of older buildings. This means that we now find ourselves with buildings that, though not too old, are obsolete and in consequence the cost of rehabilitating them may be as expensive as, if not or more expensive than, replacing them with new ones.

University infrastructures require stable financing over the long term. The 2007-2013 University Infrastructure Plan (PIU) must be deployed, and regular funding, which is used to maintain existing infrastructures, must be separated from the funding earmarked for new infrastructures.

Furthermore, the Government of the Generalitat de Catalunya must pass the Research Infrastructures Plan (PIR), which should have been passed in 2005 according to the PRI 2005-2008. There is a need for a common framework for all of the universities that clarifies, for example, the resumption of loans from the Ministry of Education and Science (2001-2007 period) and future commitments affecting the overall funding of the universities.

Project 67 > Research Infrastructures Plan

Urge the Government of the Generalitat quickly to pass and implement the PIR.

Strategy 61 > Increase selective financing for excellence and for the development of unique projects in the European context

To be able to attain international positioning, it is increasingly important to develop unique and distinct institutional profiles that enable excellence in certain areas in order to stand out due to excellence in research and attract talents. Therefore, the new model of financing of the Catalan public universities must include significant allocations to promote excellence and the development of unique, internationally recognised projects. This funding must be competitive, transparent and based on objective criteria.

Project 68 > Fund for Excellence

Urge the Government of the Generalitat to create a fund for excellence, with resources that are distributed according to previously defined targets. These targets would be included in the *University of Catalonia* Strategic Plan defined in project 2.

Strategy 62 > Improve institutional efficiency and the mechanisms for the management of resources

There is a need to improve the mechanisms of governance, management and internal efficiency of the universities. Professionalising management, increasing university autonomy with degrees of freedom and capacity for action (for example in staff management), introducing cost accounting and having the capacity to discriminate positively certain policies or actions, are critical factors in which the universities and the responsible administrations must work together with political ambition.

Personnel costs account for a high percentage of overall university costs. This means there is a need for careful consideration of the conclusions and proposals of Chapter 8 on personnel policies, and a need to have and apply management and performance indicators to the different university

services in order to facilitate the move from centralised management towards a decentralised system. In this way, it will be possible to eliminate the organisational complexity which so often characterises the universities. The introduction of simpler staff incentive systems and the right to full autonomy on the part of the universities to adapt to the general labour framework are key elements in the process of improving spending efficiency and, in short, the funding of each university.

The improved internal management of the universities must be accompanied by an improvement in the management of the university system, increasing coordination between the public universities and, in this way, benefiting from the effects of scale.

Project 69 > Aggregate public purchasing
Introduce mechanisms of aggregate public purchasing to achieve economies of scale and improve management economy.

Project 70 > Shared information system
Establish a shared information system with data that facilitate the application of economies of scale in the area of resource management.

Strategy 63 > Diversify the sources of funding

Sources of funding that are not strictly public or that are contributed by direct users are still little used. With imagination and courage, we must promote the diversification of the sources of funding, enabling joint collaborations with institutions and enterprise, encouraging donations and providing tax incentives.

Project 71 > Patronage and fiscal benefits
Promote legislative measures to promote patronage and tax benefits derived from investing in higher education and in research and innovation.

Strategy 64 > Define a new finance model for the universities of Catalonia

Catalonia's public university system needs a finance model based on the principles of sufficiency and equity and subject to rigorous accountability. A model that accomplishes the goals set out in the Lisbon Strategy and which brings spending on higher education up to the average for Europe. A model that responds more to the universities' academic goals and results. A model that enables singularising and promoting the institutional profiles of each university in their general context. A model that involves greater autonomy in university management, but at the same time requires

greater responsibility and accountability to the public authorities and society regarding their activities. A model of finance, in short, that is solid and stable for a sufficient length of time as to generate confidence in the system and give an unequivocal political signal of the aim of putting the universities and research at the centre of the social, economic and cultural model, and the model of progress of the country.

The diversity of public financing mechanisms and procedures existing today at the universities must converge in a single, simple model which is based more on performance indices. This unified model must facilitate the management of each university, put it in the global context and contribute objectivity and transparency in each of the stages of execution. To this end, one critical aspect is to advance in the systematisation of the economic information and in specifying the general criteria and methodology for allocating costs to the different academic activities.

The new model of finance must be independent of the financial situation of the Generalitat and it ought to be implemented by 2011, once the transition period defined in the Government Agreement to improve the financing of public universities for the 2007-2010 period has expired. For this reason, it is necessary to establish an agreement to start work on designing the new model of financing of the Catalan public universities.

Project 72 > Bases for a new finance model based on university costs

Analyse different models of financing in European countries and Spanish autonomous communities, highlighting the aspects that will need to be taken into account for the new model of financing of the Catalan public universities. Complete this report with a study of university needs and the costs of university activity (project 66). Create a joint ACUP/Generalitat committee that will outline the new model of finance by 2010, to be applied starting in 2011.

Project 73 > Institutional loyalty

The expenses resulting from the recent legislative changes and the adaptation to the EHEA ought to be included in the new model of university financing. Until this model exists, they should be borne through extraordinary public funding, once the impact of such changes has been quantified and the corresponding analysis of the direct and indirect costs of its application has been performed.

4

STRATEGIES AND PROJECTS

THE *UNIVERSITY OF CATALONIA* (3.1)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 1	Rethink together the University in the global framework of knowledge: re-found the *University of Catalonia*					
PROJECT 1	Efficient coordination of the university system	••	•	••		
STRATEGY 2	Create an area of cooperation in which each university can accentuate its profile, in a complementary, networked system of universities					
PROJECT 2	*University of Catalonia* Strategic Plan	••				
PROJECT 3	Boost inter-university cooperation	••	•	••		
STRATEGY 3	Strengthen the articulated, common international presence of the Catalan public universities					
PROJECT 4	Joint international strategy	••	•	•		
STRATEGY 4	Project Catalonia and Barcelona as ideal places to pursue an internationally recognised postgraduate and doctoral education					
PROJECT 5	Postgraduate Inter-University Platform	••	•	•		
STRATEGY 5	Work together to take advantage of the economies of scale and increase efficiency through joint management					
PROJECT 6	Observatory on university policies	••	•	•	•	•
PROJECT 7	Joint platform of services	••			•	

LEGEND > • Other players involved, •• principally in charge.

A UNIVERSITY COMMITED TO SOCIETY (3.2)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 6	Strengthen the fundamental role of the universities in social commitment and progress					
STRATEGY 7	Be an inclusive University, capable of formulating policies for all					
PROJECT 8	Joint programme to remove architectural barriers	••		•		
STRATEGY 8	Educate according to values and promote critical thinking					
PROJECT 9	*University of Catalonia* code of ethics	••				
STRATEGY 9	A University committed to the Catalan culture and nation					
PROJECT 10	Multilingualism in the classroom and on the campuses	••	•	•		
PROJECT 11	University reference manuals in Catalan	••		••	•	•
STRATEGY 10	Promote dialogue between different cultures and knowledge					
PROJECT 12	Annual university day of celebration: the *Dies academicus*	••	•	•	•	•
STRATEGY 11	Create a culture for sustainable development and the protection of the environment					
PROJECT 13	Sustainable *University of Catalonia* programme	••	•	•	•	•
STRATEGY 12	Promote an integrated, structured policy for universities concerning cooperation and development matters					
PROJECT 14	*University of Catalonia* solidarity programme	••	•	•	•	•

LEGEND > • Other players involved, •• principally in charge.

UNIVERSITY EDUCATION (3.3)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 13	Advance towards an integrated offer of university qualifications in Catalonia within the EHEA framework					
PROJECT 15	Offer of university system qualifications	●●	●	●●	●	●
STRATEGY 14	Foment undergraduate studies attending to social demands and needs, with more generalist entry profiles and more specialist leaving profiles					
PROJECT 16	Undergraduate studies and prior education	●●	●	●●	●	●
PROJECT 17	Graduate job placement	●●	●	●	●●	●●
STRATEGY 15	Develop an articulated offer of master's degrees of reference in Europe and the world					
STRATEGY 16	Strengthen university education that is based on knowledge and is more intensive in abilities, aptitudes and values					
PROJECT 18	Education in competencies	●●	●	●●	●	●
STRATEGY 17	Promote lifelong learning with a flexible, high-quality offer					
PROJECT 19	Lifelong learning credit system	●●	●	●	●	
PROJECT 20	University for the elderly	●●	●	●	●	●
STRATEGY 18	Establish synergies between traditional attendance based universities and the UOC in the framework of the *University of Catalonia*					
STRATEGY 19	Foment a system of assessment and accreditation based on university autonomy					

PROJECT 21	Joint instruments for internal quality and assessment	●●	●	●		
STRATEGY 20	Improve students' academic performance and recognise the studies carried out					
PROJECT 22	Academic recognition and performance	●●		●		
PROJECT 23	Secondary school-University dialogue	●●	●	●●		
STRATEGY 21	Promote educational university research and innovation					
PROJECT 24	Institute of Teaching and Learning	●●	●	●●	●	●

LEGEND > • Other players involved, •• principally in charge.

RESEARCH (3.4)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 22	Confirm the commitment by the universities to excellence research in Catalonia					
STRATEGY 23	Boost the academic career and the personnel devoted to research and innovation					
STRATEGY 24	Fully develop the training of researchers and doctoral excellence programmes					
PROJECT 25	Tutoring of doctoral students	●●				
STRATEGY 25	Attract and retain talent and foment strategic alliances with groups, universities and countries of reference					
PROJECT 26	Boost the ICREA Programme	●		●●		
PROJECT 27	Headquarters and antenna of the EIT	●	●●	●●	●	●

STRATEGY 26	Improve institutional research management capabilities					
PROJECT 28	Agencialisation and professionalisation of research management	••	•	••		
PROJECT 29	Coordinated research management and information system	••	•	••		
STRATEGY 27	Put science and culture at the centre of social and collective priorities, and foment permanent dialogue between science and society					
PROJECT 30	Master plan of scientific communication and dissemination	••	•	••	•	•

LEGEND > • Other players involved, •• principally in charge.

THIRD MISSION (3.5)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 28	Promote the transfer and dissemination of knowledge through the incorporation of graduates and doctors to the social, economic and employment fabric					
PROJECT 31	Professional development and valuation programme of doctors in the entrepreneurial, institutional and social fabric	••	•	•	••	••
STRATEGY 29	Develop a model of public university based on the third mission that provides a balance between social development and economic strengthening					
PROJECT 32	International trade portal	••	•	•	•	•
PROJECT 33	*University of Catalonia* entrepreneurship programme	••	•	•	•	•

STRATEGY 30	Foment and value the third mission among the teaching and research staff					
PROJECT 34	Assessment and incentives for the third mission among teaching and research staff	●●	●	●●		
STRATEGY 31	Promote a policy on innovation based on science and technology parks					
STRATEGY 32	Incorporate the function of the third mission by targets in university funding					
PROJECT 35	Programme-contract of the third university mission	●●	●	●●		

LEGEND > • Other players involved, •• principally in charge.

INTERNATIONALISATION OF UNIVERSITIES (3.6)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 33	Foment a common, articulated policy on international relations					
PROJECT 36	*University of Catalonia* international relations plan	●●	●	●		
STRATEGY 34	Increase and improve the quality of student, teaching and research staff and administrative and service staff mobility					
PROJECT 37	Shared qualifications	●●	●●	●●		
PROJECT 38	Office of support for mobility and strengthening of the programme of scholarships abroad	●●	●●	●●		
PROJECT 39	International mobility plan for teaching and research staff and administrative and service staff	●●	●	●		
STRATEGY 35	Increase the capacity to attract and retain talent					
PROJECT 40	International reception	●●	●	●●	●	●

STRATEGY 36	Foment the involvement of the universities in major research projects and in scientific, technological and cultural facilities					
STRATEGY 37	Strengthen active international presence in forums, international bodies and supranational institutions					
PROJECT 41	A delegation of the ACUP in Brussels	••	•	•		
PROJECT 42	Agreement for international projection with the administrations and other social agents	••	•	••	•	•
STRATEGY 38	Educate university students with the capacity to live and work in an international context					
PROJECT 43	IaH-*University of Catalonia* programme	••	•	•		

LEGEND > • Other players involved, •• principally in charge.

THE UNIVERSITY AT THE SERVICE OF PEOPLE (3.7)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 39	Guarantee fair access to higher education via a broad system of scholarships, aid and loans					
PROJECT 44	New policy on scholarships, aid and loans	•	••	••	•	•
STRATEGY 40	Bring the universities closer to the citizens					
PROJECT 45	*University of Catalonia* Equality Observatory	••	•	••	•	••
PROJECT 46	University Reception Plan	••	•	••	•	••
STRATEGY 41	Improve the quality of life of university students					

PROJECT 47	Public transport prices for university students	•	•	••	••	
STRATEGY 42	Promote the involvement of students in extracurricular activities and in alumni networks					
PROJECT 48	Scholarship programme for professional work placements	••	•	•	••	••
PROJECT 49	Promotion and creation of alumni networks	••	•	•	••	••

LEGEND > • Other players involved, •• principally in charge.

PERSONNEL POLICIES (3.8)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 43	Give social significance to the university personnel as a basis for the creation and transmission of knowledge					
PROJECT 50	New system of bonuses	••	•	••		
STRATEGY 44	Promote the identification of the university personnel with the institutional mission					
PROJECT 51	Assessment of the research activity	••	••	••		
STRATEGY 45	Foment flexible academic studies with a variety of profiles in time and following international good practices					
STRATEGY 46	Foment the professionalisation of university management and the professional development of the administrative and service staff					
PROJECT 52	University Management School	••	•	••	•	•
PROJECT 53	Bonuses for institutional management	••	•	••		

STRATEGY 47	Promote university staff mobility					
STRATEGY 48	Promote the permanent, joint assessment of university staff					
PROJECT 54	Personalised academic assignment	••		•		
PROJECT 55	Assessment of the development of the administrative and service staff	••		•		

LEGEND > • Other players involved, •• principally in charge.

AUTONOMY AND ACCOUNTABILITY (3.9)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 49	Increase institutional autonomy					
PROJECT 56	Legislative reform		••	••		
STRATEGY 50	Centralise strategic functions and decentralise operative functions					
PROJECT 57	Internal programme-contracts	••		•		
STRATEGY 51	Promote *ex post* assessment based on pre-established goals					
PROJECT 58	Simplification of systems of assessment	•	••	••		
PROJECT 59	Assessment of the *University of Catalonia*	••	•	•		••
STRATEGY 52	Extend the accountability of the universities to society					
PROJECT 60	Report on university impact	••	•	•	•	•
PROJECT 61	Indicators for differentiation and specialisation	••	•	••		

LEGEND > • Other players involved, •• principally in charge.

UNIVERSITY GOVERNANCE (3.10)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 53	Strengthen the strategic and directive-management capabilities of the universities' governing bodies					
STRATEGY 54	Improve the abilities of the university system as a whole and clarify the roles of the different bodies involved in the governance of the system					
PROJECT 62	Board of Catalan Public Universities	••		••	•	•
PROJECT 63	Joint, efficient management	••		••		
STRATEGY 55	Advance in the structuring of the University into academic units concentrating on training and research					
STRATEGY 56	Improve abilities to manage the entities linked to the sphere of each university					
STRATEGY 57	Increase professionalisation and innovation in university public management					
PROJECT 64	e-university	••	•	•	•	

LEGEND > • Other players involved, •• principally in charge.

UNIVERSITY FINANCE (3.11)

		UNIVERSITY OF CATALONIA	CENTRAL GOVERNMENT	GENERALITAT DE CATALUNYA	BUSINESS SECTOR	INSTITUTIONS AND SOCIAL ENTITIES
STRATEGY 58	Fully include the indirect costs of R&D&I activities in university funding					
STRATEGY 59	Balance university budgets					

PROJECT 65	Find a solution to historic deficits	•		••		
PROJECT 66	A study as to the financial needs of the universities	••	•	••		
STRATEGY 60	Define long-term, stable finance policies for university infrastructures					
PROJECT 67	Research Infrastructures Plan	•		••		
STRATEGY 61	Increase selective financing for excellence and for the development of unique projects in the European context					
PROJECT 68	Fund for Excellence		•	••		
STRATEGY 62	Improve institutional efficiency and the mechanisms for the management of resources					
PROJECT 69	Aggregate public purchasing	••		•		
PROJECT 70	Shared information system	••		•		
STRATEGY 63	Diversify the sources of funding					
PROJECT 71	Patronage and fiscal benefits		••	••	•	•
STRATEGY 64	Define a new finance model for the universities of Catalonia					
PROJECT 72	Bases for a new finance model based on university costs	•	••	••		
PROJECT 73	Institutional loyalty		••	••		

LEGEND > • Other players involved, •• principally in charge.

5

EPILOGUE

5
Epilogue

The *White Paper on the University of Catalonia* arises from the desire of the eight Catalan public universities to place higher education and research at the centre of national debate and the country's priorities. In the present context, in which knowledge is increasingly the central element of advanced societies and economies, Catalonia must firmly and constantly back education, the University and scientific research. Doing so requires a complementary institutional and collective effort to that of other territories and countries, due to the historical deficits that hindered us during much of the 20th century. It is an effort that requires a country-wide alliance between the governments, the universities and the agents of the education and research system of Catalonia.

Despite the clear advances made in the last thirty years, we still suffer the limitations of a low level of education at all stages, including university education. In 2005, only 14% of the population aged between fifty-five and fifty-nine possessed university studies; for the thirty-five to thirty-nine age bracket, the percentage rises to 23% of the total, but we are still a long way behind the average for Europe and the more developed countries we aspire to emulate. With regard to scientific activity, in spite of confirming significant advances during these decades, we are still a long way, for example, in terms of investment in R&D as a percentage of GDP (1.43% in Catalonia in 2006,

compared to an average for the EU of 1.81% or 3.95% for Sweden, 2.48% for Finland or 1.78% for the Netherlands).

Clear historical reasons exist that justify this relative lagging in comparison with other nearby countries, but there is certainly little time to react in a decided manner. The dynamics of social, technological and cultural change are accelerating around the world, and our society is no exception. In fact, we can state that today, the knowledge society does not exist; if anything, knowledge societies exist, and ours, the Catalan society of the early 21st century, must make a considerable effort if it wants to reach the average European level of education.

We therefore have a huge responsibility to place education and research at the centre of the project for the country. At this moment in history, Catalonia requires strategic projects that can be points of reference for our society. It must decide if it really wishes to be a knowledge-based society. If this is the case, it must consider long-term policies that will allow it to achieve this orientation and social model. Otherwise, it will have to assume that it is opting for a low-profile country model, more concerned with achieving economic targets that are more profitable in the short term. We will therefore have to choose and act accordingly.

It is also a time for necessary reflection as to what the country's model of economic development has been like in recent years: intensive in the generation of unskilled employment, accompanied by a slight drop in the position held by Catalonia in the main international league tables of innovative regions. One of the undesired distortions of this economic expansion that is sustained on activities of little added value is the growing gap in the employment market between university students' formal qualifications and the training requirements for the positions they hold. We consider that one of the main challenges of our country's economic model is to add value to the jobs that are created. That will only be possible if the culture of creativity, innovation, risk taking and enterprise can gain ground in our society. The initiative of the *University of Catalonia* aims to contribute decisively to this change in culture and economic model.

We, the rectors of the *University of Catalonia*, imagine a country where higher education must be a success story that helps to consolidate Catalonia's international reputation and is a good instrument for social modernisation and transformation; an innovative, creative country based on an educated, fair-minded and responsible society, capable of attracting and retaining the best talent.

International indices show us that higher education improves graduates' lives, that the percentage of higher education graduates is closely correlated with indicative measures of a healthy, more tolerant, committed, enterprising and culturally active society, and that it has a cluster effect because it attracts talent and creative, open people. International evidence also highlights that success stories depend on a good strategy, suitable resources and intelligent organisation. Our initiative, this *White Paper on the University of Catalonia*, seeks to help, realistically and without stridency, to put at the service of the country the series of strategic and organisational elements and resources which we are confident will make it possible to improve the chances of success of a society that has always strived for higher levels of welfare and quality of life.

What, then, is the role the *University of Catalonia* must play in the building of a better country? The *University of Catalonia* is host to one of the biggest university communities in the south of Europe, with over 230,000 students, some 14,000 lecturers and 7,000 administration and service staff. It has a rich, varied offer of university studies, and increasingly consolidated research groups in the European and international sphere; but it also has shortcomings which, as a university system, we must overcome in the coming years.

In this context, as has been stated throughout the *White Paper*, we aim to build the *University of Catalonia* as a cohesive, territorially balanced, coordinated system, with a common scope and with unique and complementary institutional profiles. With a firm desire to build a university that promotes collaborative projects in training, research and in economic and social cooperation and development. As is reflected in "The reasons behind the *White Paper",* in Catalonia, it is possible and necessary, thanks to the complementarity and the wealth of the different public universities, to build a top-level, high-impact inter-university and research cluster: the *University of Catalonia*; a cluster at the service of the country and its citizens, projected internationally as a university area of reference in Southern Europe.

The *University of Catalonia* is a University that is committed to society, to democratic values and the Catalan culture with a mission to train critical students who are socially committed to a better, more supportive and sustainable world. A University that seeks to grow within a broad institutional autonomy and in a robust system of accountability. We are united by a model of university focused on the student, that aims to be a reference of quality learning, that seeks the prestige of its staff (teaching, research and management), which fits confidently in the EHEA and the ERA,

that considers it essential to play a central role in the Catalan scientific, technological and cultural system; a system that is open to Europe and has a global vocation. In short, a University that should be a driving force for the country's development, a tool for innovation and a factor of welfare at the service of society, which promotes equality of access and permanently generates opportunities for the progress of people.

To achieve these goals requires innovative policies for the management of its teams, turning in the direction of promoting talent and confidence. It also requires bold, innovative models of governance that shatter preconceived myths. It is committed to progress with efficient management and the public accreditation of its actions, but it also demands suitable, sustainable resources, with a model of finance that is adapted to the reality that allows it to achieve the milestones expected of a quality university system supported by the achievement of objectives, transparency and corresponsibility.

The *University of Catalonia* is also a system that is rich in diversity, with powerful, differentiated universities and research centres, which, as a whole, is recognised as innovative and which has shown itself to be capable of incorporating pioneer learning methods and assessment systems in Europe and throughout the world. It is a system that is evolving, which aims to be an international reference point, which insists on receiving students who can only attend the University on a part-time basis, which demands innovative teaching resources, which demands an effective approximation of the University to the professional world, which is concerned with lifelong learning and which expects more efficacious, more flexible, quality learning models as well as leading research in all fields of knowledge, capable of generating progress and welfare.

The Catalan society requires from us that knowledge be disseminated towards new segments of society, that we should fight against student abandonment and lack of motivation, and that advantage be taken of the diversity of methodologies at the service of quality learning. The diversity of the universities that belong to our project is an excellent opportunity which we must know how to take advantage of: it enables us to benefit from our complementarities, from the optimisation of economic and teaching resources, and from the advantages that arise from the combination of a variety of learning methods.

The rectors of the *University of Catalonia* are confident that the public powers will be aware of the challenges and the opportunities put to us by the changes that occur in our society and that they will have the courage to take the essential steps. We cannot afford to waste any more time: our future

as a country depends on it. We, the universities, are ready to assume the historic challenge, and with the *White Paper on the University of Catalonia*, we provide specific proposals to promote widespread debate at the heart of the university community and in society in general that will lead us to follow this path towards a better society.

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Anna Maria Geli
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Notes

Chapter 3.1

[1] It's time to make use of the science we have; since, if we do not use it as we should (...) we do so against conscience and against what we know, and we do not wish to have the merit or the glory we can have if we use our knowledge.

[2] http://ed.sjtu.edu.cn/rank/2007/ranking2007.htm

[3] The lie of the university landscape must allow enhancing its results in a targeted fashion, updating new potentials, concentrating forces and ensuring the critical mass thanks to collaboration and coordination, as a consequence of encouraging interdisciplinarity.

Chapter 3.3

[4] In the face of the multiple challenges the future brings, education becomes an indispensable instrument to spur humankind along its path towards peace, freedom and social justice.

[5] http://www.eurydice.org/portal/page/portal/Eurydice

[6] http://www.uab.es/servlet/Satellite/Espacio-Europeo-de-Educacion-Superior/Situacion-de-la-adaptacion-1096479919117.html

[7] http://www.relint.deusto.es/TuningProject/index.htm

Chapter 3.5

[8] The University teaches people to be doctors, pharmacists, lawyers, judges, economists, public servants, teachers of the sciences and the humanities in secondary schools, and so on. In the second place, science itself is cultivated in the university, through research and the transmission of its methods. In Spain this function of creative science and of creating scientists is at a minimum.

Chapter 3.6

[9] Societies evolve and transform through the complex interaction of cultural, political and technological factors. In any society, the technological paradigms organise the available range of technologies around a core that increases the yield of each one. Informationalism is the technological paradigm that today provides the basis for a new type of social structure: the networked society, a social structure formed of networks of information made possible by information technology. This is currently the dominant shape of social organisation. Innovation, both cultural and technological, is the origin of information development, and innovation principally depends on the existence in the framework of a free society of universities and free, high-quality research centres. In the freedom of informationalism, science and power are interrelated inside a virtuous circle.

Chapter 3.7

[10] The University is the heritage of all, and it must be steered according to the civil respect that any public activity deserves. With openness, with tolerance and with a spirit of hospitality to individuals and their ideas. It is a space of free thought, which seems an old fashioned expression, but one which must always be claimed as a right.

[11] http://selene.uab.es/observatori-igualtat/Catala/Context_social/Dones%20 i%20universitat.htm

Chapter 3.10

[12] The ability to generate the act of governance of a concrete body or environment from a logic that is shared among all of the actors involved.

Acronyms

> **ACUP:** Associació Catalana d'Universitats Públiques – Catalan Association of Public Universities
> **ANECA:** Agencia Nacional de Evaluación de la Calidad y Acreditación – Spanish Agency for Quality Assessment and Accreditation
> **AQU:** Agència per a la Qualitat del Sistema Universitari de Catalunya – University System of Catalonia Quality Assurance Agency
> **BCU:** Barcelona Centre Universitari – Barcelona University Centre
> **BioCat:** Bioregió de Catalunya – Bioregion of Catalonia
> **CBUC:** Consorci de Biblioteques Universitàries de Catalunya – Consortium of University Libraries of Catalonia
> **CERCA:** Centres de Recerca de Catalunya – Research Centres of Catalonia
> **CESCA:** Centre de Supercomputació de Catalunya – Supercomputing Centre of Catalonia
> **CFGS:** Cicles Formatius de Grau Superior – Advanced Vocational Qualifications
> **CIC:** Consell Interuniversitari de Catalunya – Inter-University Council of Catalonia
> **CIDEM:** Centre d'Innovació i Desenvolupament Empresarial – Centre for Innovation and Business Development
> **CMS:** Content Management System

> **CRAI:** Centre de Recursos per a l'Aprenentatge i la Investigació – Resource Centre for Learning and Research
> **CRUE:** Conferencia de Rectores de las Universidades Españolas – Rectors' Conference of Spanish Universities
> **CRUS:** Conférence des Recteurs des Universités Suisses – Rectors' Conference of Swiss Universities
> **CSIC:** Consejo Superior de Investigaciones Científicas – Higher Council for Scientific Research
> **CYD:** Fundación Conocimiento y Desarrollo – Knowledge and Development Foundation
> **CTT:** Centres of Technology Transfer
> **DGR:** Direcció General de Recerca – General Directorate of Research
> **DGU:** Direcció General d'Universitats – General Directorate of Universities
> **DURSI:** Departament d'Universitats, Recerca i Societat de la Informació – Department of Universities, Research and Information Society
> **EBEP:** Estatut Bàsic de l'Empleat Públic – Basic Statute of the Public Employee
> **EC:** European Commission
> **ECTS:** European Credit Transfer System
> **EHEA:** European Higher Education Area
> **EIT:** European Institute of Technology
> **ENQA:** European Association for Quality Assurance in Higher Education
> **ERA:** European Research Area
> **ERC:** European Research Council
> **EU:** European Union
> **EUA:** European University Association
> **EUCOR:** European Confederation of Upper-Rhine Universities
> **Eurostat:** Statistical Office of the European Community
> **GDP:** Gross Domestic Product
> **GUNI:** Global University Network for Innovation
> **IaH:** Internationalisation at Home
> **IAU:** International Association of Universities
> **ICREA:** Institució Catalana de Recerca i Estudis Avançats – Catalan Institute for Research and Advanced Studies
> **Idescat:** Institut d'Estadística de Catalunya – Institute of Statistics of Catalonia
> **INE:** Instituto Nacional de Estadística – Spanish Statistic Institute
> **ICT:** Information and Communication Technologies
> **ISI:** Institute for Scientific Information
> **LERU:** League of European Research Universities
> **LOMLOU:** Ley Orgánica de Modificación de la Ley Orgánica de Universidades – Organic Law Modifying the Organic Law on Universities
> **LOU:** Ley Orgánica de Universidades – Organic Law on Universities
> **LRU:** Ley de Reforma Universitaria – University Reform Law

> **LUC:** Llei d'Universitats de Catalunya – Catalan Universities Law
> **MBA:** Master of Business Administration
> **MDG:** Millennium Development Goals
> **MERIT:** Maastricht Economic Research Institute on Innovation and Technology
> **MEC:** Ministerio de Educación y Ciencia – Ministry of Education and Science
> **OECD**: Organisation for Economic Co-operation and Development
> **OTRI:** Oficina de Transferència dels Resultats de la Investigació – Offices for the Transfer of Research Results
> **PIR:** Pla d'Infraestructures de Recerca – Research Infrastructures Plan
> **PIU:** Pla d'Infraestructures Universitàries – University Infrastructures Plan
> **PNRI:** Pacte Nacional per a la Recerca i la Innovació – Catalan Pact for Research and Innovation
> **PPP:** Purchasing Power Parity
> **PRI:** Pla de Recerca i Innovació – Research and Innovation Plan
> **R&D:** Research and Development
> **R&D&I:** Research, Development and Innovation
> **SME:** Small and Medium Enterprise
> **UAB:** Universitat Autònoma de Barcelona
> **UAO:** Universitat Abat Oliba
> **UB:** Universitat de Barcelona
> **UCM:** Universidad Complutense de Madrid
> **UdG:** Universitat de Girona
> **UdL:** Universitat de Lleida
> **UIC:** Universitat Internacional de Catalunya
> **UNEIX:** Portal del Sistema d'Informació d'Universitats i Recerca de Catalunya – Portal of the System of Information on Universities and Research of Catalonia
> **UNESCO:** United Nations Educational, Scientific and Cultural Organisation
> **UOC:** Universitat Oberta de Catalunya
> **UPC:** Universitat Politècnica de Catalunya
> **UPF:** Universitat Pompeu Fabra
> **URL:** Universitat Ramon Llull
> **URV:** Universitat Rovira i Virgili
> **UV:** Universitat de Vic

7

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CAIXA CATALUNYA

WHITE PAPER
ON THE UNIVERSITY OF CATALONIA

In recent years, universities have been subjected to a process of reflection and considerable changes. They are called upon to play a strategic role in today's changing society and in the knowledge economy. Hence, the *Associació Catalana d'Universitats Públiques (ACUP)* believes that right now is the best time to compile and release the *White Paper on the University of Catalonia* to contribute, by giving a Catalan viewpoint, to the reflection in Europe as to the state of the University. The *White Paper* is, furthermore, the configuration of a common roadmap of public Catalan universities to build the *University of Catalonia*, a collective, cooperative strategy which can be used to turn our country into a university area of excellence in southern Europe.

This *White Paper* opens up to Catalan society a debate as to the future model of the University. It is the expression of a point of view that strives to be added to, tinged and enhanced by the other points of view that coexist in our society. At the same time, the *White Paper* clearly aims to be applicable. It presents eleven broad outlines for the future model of the University as well as sixty-four strategies and seventy-three concrete projects to be launched in the coming years in order to build the new University.

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